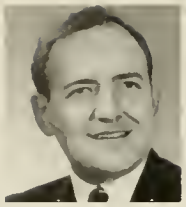
MONTANA OUTDOORS

MAY / JUNE 1976
SIXTY CENTS



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THE COVER: The nonconsumptive users of wildlife—backpackers, cross-country skiers, photographers, bird watchers, etc.—are now asking for more consideration for nonhunted wild animals. And they have some good points. However, this has faced us with a new dilemma, as pointed out by Hank Fischer on page 34: How are these new programs funded? Front cover—F&G photo by Bill Schneider.
Even dedicated fishermen sometimes miss the boat. And this is especially true with eastern Montana farm ponds. Al Elser describes this underused resource in another *Montana Outdoors* Recreation Guide starting on page 15. Back cover—photo by Frank R. Martin.

ASHTON'S

MONTANA OUTDOORS
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the philosophy behind fishing regulations

a livable environment for WILDLIFE is a quality environment for MAN

There is a certain trauma associated with spring opening of general fishing season—suffered, I believe, from the mental gymnastics of deciphering current fishing regulations. An earnest effort has been made to clarify the regulations. Still, I suspect that most anglers venture forth somewhat bewildered.

Before you begin cursing the Dept. of Fish and Game for long, complex regulations, remember that you have helped create this graphic Frankenstein. Anglers themselves have insisted upon many of the eccentricities found in the fishing proclamations because everyone's favorite fishing spot is to that person unique and in need of a special bit of management.

I'm sure most fishermen have, at some time, wondered about the logic behind fishing regulations. Some of the reasons for regulations are apparent, and others are obscure. Generally, the philosophy behind fishing regulations falls into these categories:

•**Preventing overfishing.** Montana has some waters that only see an occasional fisherman. So fisheries managers have, in the past at least, tended to minimize the impact of overfishing. However, in some places, fishing pressure is now heavy enough to warrant limiting the harvest to prevent overfishing. Certainly, in waters where natural reproduction is good and water quality high, heavy pressure can be sustained. In other waters, where the quality of the aquatic environment is less than good, protection from overfishing is necessary.

•**Setting a psychological goal.** In most Montana fishing waters, however, the creel limit serves psychological more than management purposes. The "limit" is the angler's goal. And even if he doesn't attain this goal, trying to reach it adds to the fishing trip. This rightly could be called "people management" rather than "fish management."

•**Providing an equal opportunity.** This philosophy—to insure that anglers have an equal opportunity to catch fish—may be based on some faulty assumptions. It assumes, for example, that each fisherman has equal fishing skills, equipment and accessibility to prime fishing waters which, of course, is hardly the case. The most obvious fault in this philosophy is, I believe, fishing skills. Fisheries research has concluded that something like 20% of the fishermen consistently catch their limits, while about 40% usually come home with empty creels. There is an inequity here which cannot be eliminated by any type of fishing regulations.

•**Limiting the game fish harvest to sporting methods.** Granted, some arguments exist about what exactly constitutes a "sporting method." Nonetheless, these regulations attempt to prevent "nonsporting methods," such as nets and explosives, while still allowing fairly efficient means of catching fish.

•**Preventing introduction of undesirable fish.** These regulations meet little opposition. If Montana would have had tighter regulations on this point in the past, perhaps the spread of carp and other trash fish could have been limited and perhaps the state would have more cutthroat trout and grayling, two species that find it difficult to compete with exotic species.

•**Insuring public health and safety.** These regulations are also mostly people management. Two examples are regulations to protect fishermen from such hazards as the outlets from dams and to protect water cleanliness in municipal water supplies for public health reasons.

Perhaps the general underlying philosophy expressed in all the department's regulations is protection of the resource while providing as much recreation as possible. We know it's confusing at times. But department fisheries personnel will gladly visit with you on the philosophy behind any specific regulation.

Wes Woodgerd

Wes Woodgerd, Director
Department of Fish and Game

The Art of Social Conservation

by Dr. W. Leslie Pengelly

CONSERVATION problems are basically of two types—"survival" and "enjoyment." Various agencies and many individuals are actively involved in "survival" conservation—providing food, housing, defense, employment and the mechanical and political machinery to do the job. "Enjoyment" conservation, on the other hand, deals with the qualities that enrich our lives—space to live in and space to play in, wild scenery to enjoy and wild animals to observe, hunt or photograph. As wildlife conservationists, we may specialize in "enjoyment" conservation, but it should also be obvious that we must understand "survival" conservation if we are to integrate the two activities successfully.

Most textbooks dealing with the conservation of natural resources itemize the standard subjects—water, soil, minerals, plants and animals. The conservation of human resources is often left out to avoid complicating the picture. This airy dismissal is justified if we can assume that proper conservation of the parts of the natural resource complex adds up to proper conservation of the total human resource.

There is a current philosophy that people are the factor motivating conservation and that nature was created for man's enjoyment. There is strong evidence, however, that when the emphasis is placed only on the accumulation of material wealth as an end in itself, civilizations have declined and nations have perished.

We should conserve resources for human use and enjoyment to achieve the highest quality of living consistent with an ethical consideration that balances our demands against a reasonable prediction of their availability for an infinite period.

Individuals need food, shelter and physical and spiritual enjoyment. In turn, a healthy, happy individual with abundant energy and motivation is himself a resource whose energy can be used to strengthen our nation and civilization. Collectively, our societal needs are similar. We need resources for community protection, growth, health, welfare and education. We also need resources for job stability and for our cultural and aesthetic interests. The total is referred to as our "social capital"—all we have as a nation in the way of natural resources and as a people. Should we use them up as fast as we can devise new and more wasteful techniques? Or should we ration them according to supply and not according to demand?

The challenge in proper resource management appears twofold: (1) too many people and (2) too many wasteful people lacking an ecological knowledge and conscience.

The nations's teachers and conservation leaders have been assigned the task of arousing public awareness of the consequences of the profligate abuse of our supplies of raw materials. They then must attempt to create new attitudes and eliminate past misconceptions.

Finally, the stage is set for action. Eighty per cent of our population live in cities, away from personal contact with the land. They are bombarded constantly with the idea that we cannot possibly run out of anything, so it has become quite a task to get past our first step of awareness or recognition.

We then face a much more difficult assignment—development of attitudes wherein we resolve to do something about it. Many "professionals" haven't gotten this far so the vast army of conservation illiterates is not always well led. Since the action phase is predicated on the understanding and resolve that precedes it, it is not surprising that we use such terms as "crisis," "problems" and "dilemma" in dealing with natural resource utilization.

One of the most powerful tools ever devised to arouse public consciousness of vital problems has been use of slogans, whether it be for wartime recruiting or peacetime fire prevention. The Forest Service (FS), for example, has made good use of Smokey Bear as its spokesman to spread the gospel of fire prevention. The FS uses other phrases such as "wise use," "multiple use" and "greatest good for the greatest number for the longest time," which have become widely quoted, if not widely understood. Because of the possibility for lack of understanding or of misinterpretation of the intent of the phrase, we should insist upon vigorous implementation of these preliminary efforts. We cannot rely alone on catchy slogans and appealing symbols, but should try to achieve real understanding as well.

THE PROMISED LAND

Many dichotomies exist in this not-so-straight and narrow path to the promised land of all play and no work. First, there obviously is not universal agreement nor understanding about the current status of our resources, what is the wisest use, nor the greatest good, nor who shall be the judge. Who makes the final decision on how resources held in public trust are used? How do you change the attitudes of people so their actions can be controlled indirectly? Should all people be forced to comply with the decisions of a few? We can avail ourselves of 20-20 hindsight to "view with alarm" and deplore the mistakes of the past, or we can look ahead to avoid past mistakes.

On the one hand, we have thousands of trained people, such as engineers, foresters, doctors and biologists, making decisions daily that affect our resources. Another major group, the elected and appointed persons, pass laws, approve expenditures and determine policies based on uneven mixtures of facts, prejudices, pressures and expediency. We also have the landowners dealing directly with natural

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F&G photo by Gene Colling

resources with varying degrees of understanding and skill. And finally we have the public in the role of consumer and taxpayer. The resource administrator is often caught between two opposing forces—the desires (right or wrong) of the masses and the facts (real or imaginary) of the technical staff.

There is growing dissent and often open conflict among technical personnel as human populations swell and competition for space, funds and attention increases. The gloomy Malthusian extremists predict a miserable demise for us with seething masses of starved persons overwhelming the globe. Meanwhile the bubbly Cornucopians host their fabulous "horn of plenty" banner, with the slogan, "Science will save us," while they prate glowingly about our ever increasing standard of living.

I am confident that most of us wander about between the confines of these extreme positions. We recognize the breakthroughs made by science, but we also are aware of problems created by these advances. Progress has been facetiously defined as the "substitution of one nuisance for another." When shortages arise and prices soar, we develop substitutes, we use lower grade materials or we go without certain products. There are some resources, however, that cannot be purchased or created and these are the immediate cause of concern.

Space is such a resource and quality is its attribute. The current headlong trend toward mass use or abuse of every square foot of the globe poses serious threats to our standard of living and our survival as a people. I am talking now about more than mere survival. Personal tastes, values and other quality judgments are a vital part of what we call a standard of living and blind development may degrade our society rather than enhance it.

Society on the one hand seems ever willing to discard traditions and to ignore the destruction of irreplaceable places and values while simultaneously resisting needed changes. We have a dominant concern for values which are transient and insubstantial—pleasure, ease and prestige—at a time when we are desperately in need of a more stable community, one in which pleasure and ease are incidental by-products of a disciplined society. We have perverted "freedom with responsibility" to read "freedom from responsibility."

The needs of society keep changing and an accurate prediction of future demands is a very difficult challenge. Decisions made now will have a lasting and often irrevocable effect on future generations. Edmund Burke said that an unwritten compact exists between the dead, the living and the yet unborn. Our link in both directions in history is thus firmly connected by the manner in which we handle the resources at hand—it is a reflection of our culture, the mirror of our spirituality.

You might inquire where we are today in resource conservation after only six decades of trial. Aldo Leopold likened conservation to a fleeting bird which is a receding, and hence a more difficult, target. Our early conservationists were largely amateurs, like Teddy Roosevelt and Gifford Pinchot, men who were "on fire for their country." Their self-appointed mission was to protect rare places from man's greed and heavy-handedness; meanwhile the rape of the more abundant resources was accelerating. At the turn of the century, the applications of science were added to these strong personal feelings and the trend was toward more specific missions: protection of trees, grass, water, minerals, soil and wild animals.

Gradually, however, a conservation conscience has been developing and professional and amateur conservationists now realize that man himself is the real object of their efforts. This broadens the scope and the difficulty for the problem is more than biological; it is also sociological, economic and political. Conservationist J. N. "Ding" Darling observed that no amount of sociological salve can be expected to solve what is basically a biological problem (survival). Man is still an animal with a biological heritage—not a scientific, industrial or urban heritage—and this must be our approach even though biologists are ill-equipped to attempt the solution alone.

Henry Romney (1960) proposed a different, dynamic approach to conservation, . . ."this most urgent of American problems." In a two-part series in *Sports Illustrated*, titled "A New and Human Science," he discussed "social conservation." Romney stated: "The historic responsibility of the conservationist to protect the resources from man has now changed. Today it is man himself who is in danger of becoming a victim of the industrial civilization he has spread so vigorously across the land. The dilemma of man enmeshed in an asphyxiating environment of his own creation presents the greatest challenge conservation has ever known, one that calls for a fundamental change in attitude on the part of conservationists, a great broadening of conservation's socioscientific base."

Alexis de Tocqueville had written earlier (1831) an account of his impressions of America: ". . .Such is the position of the New World that man has no other enemy but himself."

Apparently that was enemy enough, for a more recent traveler, Gen. Omar Bradley, brought us up to date: "Year after year our scenic treasures are being plundered by what we call an advancing civilization. If we are not careful we shall leave our children a legacy of billion-dollar roads leading nowhere except to other congested places like those they left behind. We are building ourselves an asphalt treadmill and allowing the green areas of our nation to disappear."

Other writers have felt that the inevitable consequence of further mechanization and greater

human concentrations can only lead to one conclusion—further restrictions and regimentation with consequent loss of liberty and opportunity for living a full life.

Lewis Mumford, American writer and critic, is cautiously optimistic that a miracle might take place—that people will decide they have had enough, that they will not continue along the path of increasing narrowness and specialization, of increasing populations and growing restrictions.

Mumford continues, "If the goal of human history is a uniform type of man, reproducing at a uniform rate, in a uniform environment, kept at a constant temperature, pressure and humidity, living a uniformly lifeless existence, with his uniform physical needs satisfied by uniform goods, all inner waywardness brought into conformity by hypnotics and sedatives, or by surgical extirpations, a creature under constant pressure from incubator to incinerator, most of the problems of human development would disappear. Only one problem would remain: 'Why should anyone, even a machine bother to keep this kind of creature alive'?"

Rachel Carson in her very stimulating analysis ("The Silent Spring") of the growing threat of herbicides and pesticides to our future welfare wrote, "It is ironic to think that man may determine his own future by something so seemingly trivial as the choice of his insect spray." And Albert Schweitzer added, "Man can hardly recognize the devils of his own creation."

The social problem typified by the decline of cities, the ugly landscapes, the disappearance of open space with a little touch of greenery, the barbaric fouling of our air and water all point to the lie we perpetuate in our automatic repetition of phrases like "America, the Beautiful," without looking about us.

Clinton Rossiter of Cornell University has written: "No people in history has ever had to put up with so much vulgarity, bad taste and ugliness in its surroundings. History has flung us an exciting challenge by making us the first of all nations in which men of every rank could display a measure of taste, and we have responded by displaying bad taste on a massive scale. . .our private lives get richer and our public lives get poorer. . . ."

How can we conserve the human resources in such an environment? How can we preserve the proper environments when we isolate the parts and each of us defends or exploits his own narrow interests? Are we economic retrogressionists if we believe that the destruction of a resource to constantly prime the economic pump is morally, ethically, biologically and even economically wrong?

The recorded history of man's conquest of the earth has given us ample warning of the consequences of our actions. Are we afraid to face reality or haven't we been properly convinced that we are about to "dine at a banquet of consequences?" To date there have been far too few practical suggestions, beyond generalities, of things we might do to change conditions.

In a 1961 article in *Saturday Review*, Samuel Ordway wrote, "The reason all remedies so far proposed seem impractical is that we of the affluent society are afraid of losing the wealth and security our consuming economy is believed to supply. But in the practice of this belief we are threatening something far more precious than economic security and pushbutton comfort. We are threatening our freedom to be individuals. We are massing to consume the natural environment, not asserting the individual prerogative to work with nature. . . ."

Wild nature is synonymous with liberty. Man in his attempt to confine, reduce and degrade his environment succeeds only in confining, reducing and degrading himself.

The threat of the masses lies not only in their individual needs and demands but in the influence they exert politically which in turn determines how we use resources. The current massive trend toward outdoor recreation is a case in point. Leopold predicted this in 1937 when he said, ". . .We are faced with the self-defeating nature of mass use of our outdoor resources. The cycle is too familiar—a gain in quantity often results in a loss of quality."

Recreation is the fastest growing use of public land, much to the alarm of other users. More people are being produced to live longer and work less, in urban concentrations and with more money, better transportation and a greater urging to seek recreation. We have a split here also. Many view this trend with hopeful anticipation, happier citizens aglow with health and pride. Others view it as a new resource to exploit and the economic pressures obscure the higher motives.

The relationship between human resources and our use of natural resources is best expressed by Benjamin Disraeli: ". . .The health of the people is really the foundation upon which all their happiness and all their powers as a state depend." Are we using our lands, plants, animals, minerals and waters in such a way that our personal health is improved and our strength as a nation is enhanced?

And not all outdoor recreation can be classed as healthful. I am thinking here of the mounting health hazards brought on by inadequate protection and subsequent contamination of our waters by the ever increasing hordes, the awesome hazards of the weekend traffic snarls and threats to the mental health of our frustrated, modern day cliff dweller in his search for an unoccupied square foot of beach. We are destroying the very things we profess to love.

Meanwhile, when fees are suggested for public campgrounds to finance the developments for those

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who use them, you immediately hear much anguished outcry, "Free recreation is our heritage." I wonder if it should be "free" at the expense of others, as well as at the expense of the basic resources.

Exhaustive studies conducted in California show that recreation needs of the masses must be met, but fortunately they do not all demand the same type of recreation. The great demand seems to be for recreation lands within 35-40 miles of communities to meet the needs of low mobility groups with simple desires, i.e., picnicking, sightseeing and golfing.

Provision must also be made for the more active participants—skiers, boaters, hunters, fishermen and wilderness travelers. Since some of these uses conflict with each other and often with the resource itself, it becomes obvious that we need a national policy on land use—and soon. Piecemeal solutions will not suffice, but that is what we usually get. At the first sign of federal action to meet these recreation needs, the automatic responders (i.e., Chambers of Commerce, Farm Bureau, lumber industry) immediately raise their objections, waving the same battle-torn flags—"too much federally owned land," "loss of local taxes," "just send the money."

Harassment of wildlife and their steadily shrinking environments will naturally ensue due to increased human pressures. This is accelerated where the masses are allowed to wander at will and no provisions are made for direction and enforcement. People can enjoy water-oriented outdoor leisure such as boating and water skiing long after the consequences of their activities have destroyed the surface fishing through constant pollution by oil and gas discharges. Parking lots and ramps may well gobble up what the participants don't trample.

Skiers can also plow around the mountain long after the last elk or deer has given up the unequal fight of surviving difficult winters in competition with too many of their own kind and of the even more prolific, aggressive and noisy bipeds in stretch pants.

So what of the quality in recreation, of the person who seeks the solitude of a quiet lake for fishing or for soul regeneration, of the naturalist seeking the clue to nature's riddles in unspoiled remnants of America? Provision must be made for them also if we ascribe to what we profess in our democracy—a desire to live fairly with our fellow man. Promiscuous development in the guise of satiating majority wishes is not always good, nor always the wisest use for the greater number. Greatest happiness cannot accompany greatest destruction.

Robert Cushman Murphy, curator emeritus of the American Museum of Natural History, recently voiced a complaint with universal meaning against promiscuous development of access: "Why must we supply traffic arteries to shunt everywhere people who want to sit on their bottoms? Is there no virtue in cherishing something that has to be won by purposeful desire and a little effort?"

Murphy also disputes the theory that road builders are working toward the greatest good for the greatest number: "It is high time that our society began to recognize the bench marks (or the waterline) at which the greatest number utterly wipes out the greatest good, once and forever."

Conservation is an attempt toward permanently balancing need and supply. This involves the future. It includes beauty and space as some of our work toward this goal, however unattainable. The conservation ethic and conscience of Leopold are part of the motivation needed to meet this obligation. We must also remember that dedication and competence are not necessarily synonymous.

Conservation probably never will be a mass movement, a grass-roots upheaval, with much fervor and happy hosannas, due to the restrictions it imposes upon the freewheelers and the apathetics among us. Rather it will be the responsibility (as part of national defense) of a militant few to keep the supply lines open. These few, professionally trained and directed, will be assisted by dedicated and competent amateurs who have the understanding, the conscience and the will to carry it out. This minority group has been winning a few battles or stays of execution, by endless personal sacrifice, and by the "intolerable fatigue of persuasion."

We have spent 20 or 30 years in the field of wildlife conservation attempting to get across the idea of habitat preservation as the key to wildlife preservation. There is ample evidence that the rank and file hasn't heard or cared, if we can judge by the popularity of fish hatcheries vs. stream protection, wetlands destruction vs. waterfowl habitat preservation, and so on ad infinitum.

We also know that what we do to man's environment we also do to him. So if the conservation of man is to be determined by the conservation of his habitat, it would appear that we had better sharpen our tools and our resolve. As with the ungulates, we apparently have no saturation point and no mechanisms for control of our numbers. Such control is long overdue if we are to survive with any degree of freedom, dignity and happiness.

•*This article was adapted from a paper presented before the Plains and Rocky Mountain Section of The Wildlife Society, Pingree Park, Colo., Aug. 25, 1962. It was later published in the* Naturalist, *Natural History Society of Minnesota (Vol. 14, No. 3, 1963) and reprinted in the* Conservation Volunteer *(Nov./Dec. 1965) as well as in numerous other state, national and international conservation publications.*—Ed.

THE CATCHALL

FS Purchases Land in Rock Creek

The Forest Service (FS) has purchased 1,233 acres in the lower Rock Creek Valley, according to Lolo National Forest Supervisor Orville Daniels.

Once known as the Valley of the Moon Ranch, owned by Robert H. Bandy, the land is approximately 23 miles southeast of Missoula, just south of Interstate 90 and the Clark Fork River, between Butte and Missoula. The purchased land lies in Missoula and Granite counties.

"Rock Creek is recognized as one of Montana's finest trout streams," Daniels said. "It enjoys a national reputation for blue ribbon trout fishing. Approximately 2.5 miles of Rock Creek flow through the purchased lands."

The upper stretches of Rock Creek and the Rock Creek watershed are in the Lolo and Deerlodge National forests. The lower 12-13 miles of Rock Creek are largely private lands, heavily subdivided into small recreation homesites.

Daniels explained that the land purchased occupies an area of intermingled ownership, with many of the alternate sections of land in this portion of the Lolo National Forest in private ownership.

"This purchase consolidates Forest Service ownership in this area," Daniels said, "and will facilitate more effective land-use planning and resource management in this valley." He said that outdoor recreation will be emphasized in future planning for resource management in the area.

"We have been approached, over the years, by a number of Montana citizens and organizations, urging us to do something to preserve portions of the lower Rock Creek in a natural condition."

The Nature Conservancy, Arlington, Va., a national, nonprofit organization, purchased the land from Bandy last year, and offered it to the Forest Service. The Nature Conservancy sold the 1,233 acres to the Forest Service for $406,900 (approximately $330 per acre).

HEGSTAD APPOINTED TO COMMISSION

Spencer S. Hegstad has been appointed to the Montana Fish and Game Commission by Gov. Thomas L. Judge. Hegstad's

Spencer S. Hegstad

term began April 11, 1976 and will continue through Jan. 1, 1979.

Born in Reno, Nev., the new commissioner grew up in Butte and was graduated from Butte High School in 1961. He attended Western Montana College in Dillon where he majored in business and industrial arts. He is the Sears authorized merchant and operates the catalog store in Dillon.

Hegstad has served as president of his local Jaycees chapter, as well as secretary and vice president of the Montana Jaycees. He also chairs the Beaverhead Democratic Central Committee. He is a member of the Dillon B.P.O.E. #1554, Beaverhead Chamber of Commerce and Dillon Volunteer Fire Dept.

He and his wife, Lillian, have four children: Jodie, 10; Jamie, 9; Jennifer, 7, and Joshua, 1.

PUBLIC GROUPS PUSH LOBBYING BILLS

Legislation permitting nonprofit conservation groups and other public charities to participate in the legislative process is now before both houses of Congress. The bills, H.R. 8021 in the House and S. 2832 in the Senate, would remedy the vagueness and uncertainty of existing law, which effectively prohibits public groups from lobbying.

The Internal Revenue Code grants tax exempt status to publicly supported charitable organizations and permits those who contribute to those organizations to deduct the gifts for income tax purposes. The law states, however, that "no substantial part of the activities" of a charitable organization may consist of efforts to influence legislation. The term "substantial" has never been defined and leaves the organizations at the mercy of subjective determinations. Thus they are reluctant to lobby for fear of losing their tax exempt status.

While nonprofit conservation groups and other charities are faced with that vague standard, business organizations are not. In fact, they are not limited in any way and may deduct all expenses directly related to lobbying. Eighty organizations are supporting the bills. Conservationists, sports-

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men and persons interested in better resource management are urged to contact their Congressional delegations and request support for H.R. 8021 and S. 2832.—*Wildlife Management Institute*

KEEP A "FISHERMAN'S LOG"

If you fish regularly in Montana and aren't keeping a "Fisherman's Log," the department's Fisheries Division needs your help. And the log is available—free—for the asking.

Fishermen are asked to record the name of water fished, hours fished on each water, the date, the

county or nearest town, and the kind, number and average length of each fish caught. Every scrap of information collected is utilized in some way, according to George Holton, assistant administrator of the Fisheries Division.

Holton pointed out the log has been a valuable tool in determining the effectiveness of fish management programs and trends in individual waters. Because the program has been operating since 1951, present trends on a given stream can be compared with older records. For example, a three-pound cutthroat was caught in summer 1974 on the Nezperce Fork of the Bitterroot River. If in future years fish this large are still caught and the species composition and catch per hour remain about the same, fisheries biologists know this particular stream's fishery is still in good condition.

To obtain your log, write the Fisheries Division, Dept. of Fish and Game, 125 Roberts; Helena, MT 59601. Your log will be recalled in November or December, the information recorded and the log returned to you.

WILDLIFE SOCIETY ELECTS PENGELLY VICE PRESIDENT

Fish and Game Commissioner Dr. W. Leslie Pengelly has been elected vice president of The Wildlife Society, an international professional association dedicated to sound management of wildlife resources.

Pengelly, chairman of the Dept. of Wildlife Biology and professor of forestry at the University of Montana in Missoula, was installed at the society's annual business meeting March 22 in Washington, D. C. The society's active membership of nearly 9,000 includes administrators, educators, information and law enforcement specialists, managers and research scientists in over 70 countries.

Since he joined The Wildlife Society in 1948, Pengelly has been actively involved with several committees. He served as secretary-treasurer of Montana's chapter of the society in 1966.

Pengelly joined the UM faculty in 1954 and directed the University's Wildlife Extension Unit for nine years. He earned a B.A. in biology from Northern Michigan University, Marquette; his M.S. from the University of Michigan, Ann Arbor, and his Ph.D. from Utah State University, Logan, both in wildlife management.

Pengelly's term as vice president of The Wildlife Society will last one year.

FREEMAN NAMED "OUTSTANDING PROFESSIONAL"

Wynn Freeman, administrator of the Game Management Division for the Montana Dept. of Fish and Game, has been named "outstanding professional in the field" by the Montana chapter of The Wildlife Society at its annual meeting in Missoula. This was the first time in the organization's history that such an award has been given.

In making the presentation, Freeman's many contributions in the field of wildlife management were recognized. As long as 20 years ago, he insisted on high standards for professional game biologists, establishing at that time a minimum requirement of a master's degree. He was largely responsible for the initial break in the tradition which required an entire state to be in a single waterfowl flyway—a break which was promoted with sound biological data. But probably his greatest contributions came in the many instances where sound biological principles in game management were initiated, maintained and sometimes salvaged in the face of very trying conditions.

Freeman received his B.S. in wildlife management in 1943 from Utah State University, Logan. He entered the Navy, was sent to

Wynn Freeman

Midshipman's School at Columbia University and served as a Navy officer until 1946. He returned to Utah State and earned his master's degree in 1948, the same year he joined the department as a waterfowl biologist. He became administrator of the Game Management Division in 1963.

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MONTANA STATE FISHING RECORDS

For Montana anglers, 1975 was a big year—six state records were broken, including those for Dolly Varden, golden trout, lake trout, pallid sturgeon, sauger and smallmouth bass. In addition, state fishing records for lake whitefish and goldeye were established for the first time in 1975.

To enter your whopper in the 1976 competition, catch a fish bigger than the one listed. Then follow these rules:

(1) Weigh the fish on a government-tested scale such as those in grocery stores or meat markets.

(2) If possible, weigh the fish in the presence of a department employe. (An affidavit stating length and weight from the store at which the fish was weighed is acceptable.)

(3) The fish must be correctly identified. If you're in doubt, contact a department fisheries biologist to verify the trophy's identification. (A photograph clearly showing all characteristics will usually suffice.)

(4) Information—length, weight, how caught, date caught, body of water in which caught, nearest town and name and age of fisherman—should be sent to the Environment and Information Division, Dept. of Fish and Game, 125 Roberts; Helena, MT 59601.

Species	Weight	Angler	Year	Location
Brook trout	9 lbs. 1 oz.	John R. Cook	1940	Lower Two Medicine Lake
Brown trout	29 lbs.	E. H. "Peck" Bacon	1966	Wade Lake
Black crappie	3 lbs. 2 oz.	Al Elser	1973	Tongue River Reservoir
Bluegill	2 lbs. 8 oz.	George Schlosser	1967	Dengel Reservoir
Burbot (ling)	11 lbs. 12 oz.	Jim Cooper	1967	Fort Peck Reservoir
Coho	4 lbs. 14 oz.	Irven Stohl	1973	Fort Peck Reservoir
Cutthroat trout	16 lbs.	William D. Sands	1955	Red Eagle Lake
Channel catfish	21 lbs. 5 oz.	Gary Eppers	1964	Missouri River
Dolly Varden	25 lbs. 10 oz.	James Hyer	1916	unknown
Drum	13 lbs. 6 oz.	George Gallagher	1973	Fort Peck Reservoir
Golden trout	2 lbs. 9 oz.	Raymond D. Gallik	1975	Lightning Lake
Goldeye	1 lb. 7 oz.	L. H. Adler	1975	Ft. Smith-Bighorn River
Grayling	2 lbs. 10 oz.	Mark Daniels	1974	Handkerchief Lake
King salmon (chinook)	4 lbs. 7 oz.	Berry Gillis	1972	Missouri River
Kokanee salmon	5 lbs. 4 oz.	unknown	1969	Helena Valley Reservoir
Lake trout	41 lbs. 8 oz.	John E. Boller	1975	Flathead Lake
Lake whitefish	1 lb. 9½ oz.	Jere Hightower	1976	Flathead Lake
Largemouth bass	7 lbs. 6 oz.	Jere Hightower	1973	Ninepipe Reservoir
Mountain whitefish	4 lbs. 2½ oz.	Bob Johnson	1973	Clark Fork River
Northern pike	37 lbs. 8 oz.	Lance Moyler	1972	Tongue River Reservoir
Paddlefish	142 lbs. 8 oz.	Larry Branstetter	1973	Missouri River
Pallid sturgeon	42 lbs. 4 oz.	Allen Schrimsher	1975	Fort Peck tailwaters
Rainbow trout	20 lbs.	C. J. Brohaugh	1952	Cliff Lake
Rainbow-cutthroat hybrid	17 lbs. 10 oz.	R. A. Rousselle	1973	Ashley Lake
Sauger	7 lbs. 2 oz.	Raymond V. Johnston	1975	Tongue River Reservoir
Shovelnose sturgeon	8 lbs. 12 oz.	Leo Chapel	1974	Missouri River
Smallmouth bass	4 lbs. 11½ oz.	Bob Higson	1975	Horseshoe Lake
Walleye	14 lbs.	Neil Berg	1974	Nelson Reservoir
White crappie	1.72 lbs.	Ken Walcheck	1972	Tongue River Reservoir
White sturgeon	96 lbs.	Herb Stout	1968	Kootenai River
Yellow perch	2 lbs.	Gerald Pottratz	1974	Nelson Reservoir

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THE LOWER MADISON

from blue ribbons to inner tubes?

by Hank Fischer

MONTANA: the land of the rivers with the "magical" names. Mention of such sparkling waters as the Beaverhead, Big Hole, Yellowstone and of course, the Madison, evokes images of clean, rippling streams and fish-filled afternoons. Trout fishermen across the nation dip their rods in respect to these fabled Montana waters and the magnificent Madison draws perhaps as much praise as any. Yet if fisheries biologists prove correct, a large section of the Madison may soon lose much of its "magic"—and its trout.

The 37-mile section of the Madison River below Ennis Lake, commonly known as the lower Madison, has earned the label of blue ribbon trout water for many years. As recently as 1970, biologists estimated that every 1,000 feet of river averaged 703 trout, weighing a total of about 514 pounds. The blue ribbon designation—adopted jointly by the Dept. of Fish and Game and the U.S. Fish and Wildlife Service and reserved for only the most scenic, accessible and productive trout streams in the nation—threatens to go up in steam. The lower Madison is slowly but surely becoming too warm to support trout.

Department fisheries biologist Dick Vincent, who heads a team which has intensively studied the Madison since 1967, terms the future of the lower Madison "precarious"—and he has the data to back it up. Creel censuses, stream surveys, growth rates and general fish condition all point toward a slow and steady decline in the lower Madison fishery.

All of these warning signals lead Vincent to a dire prediction: "If we have a hot summer, which we haven't had for several years, there could be a fish kill on the Madison that could literally decimate the fishery."

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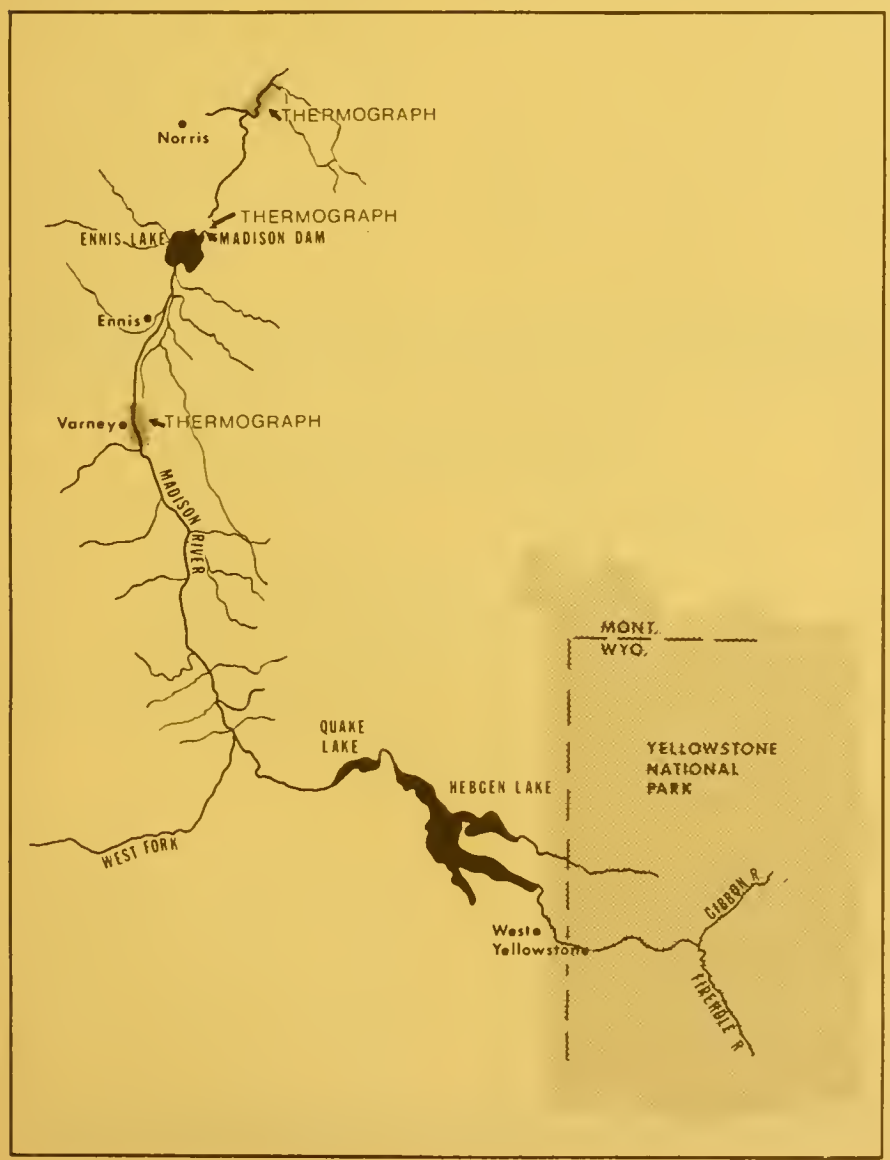
Few people know the fisheries situation on the Madison as well as Vincent. He received nationwide recognition for his earlier Madison River studies, demonstrating how the planting of hatchery-reared trout actually decreased the overall wild trout population in the river. (See "The Catchable Trout" in the May/June 1972 *Montana Outdoors.*) This revolutionary finding promises to influence stocking programs across the country. His latest findings on the Madison should prove similarly noteworthy.

Why do high water temperatures occur in a mountain stream like the Madison? All the current problems began with construction of the Madison Dam in 1900. This dam, which forms Ennis Reservoir, triggered a series of environmental changes that are transforming the lower Madison from a blue ribbon fishery to a "hot spot" for swimmers floating the river in inner tubes.

Perhaps even more significant, since the dam is so old, a look at problems now surfacing on the lower Madison provides an interesting preview of what may lie ahead for many of our dammed trout streams. The picture isn't cheery.

Formed by the confluence of the Firehole and Gibbon rivers in Yellowstone National Park, the Madison owes much of its high water quality to its pristine source. It flows north for about 140 miles before uniting with the Gallatin and Jefferson rivers near Three Forks, Mont. These three rivers, named by Lewis and Clark, join to form the Missouri.



Two reservoirs straddle the Madison River: (1) Hebgen Reservoir, a large storage reservoir created by Hebgen Dam at the head of Madison Canyon near Yellowstone Park and (2) Ennis Reservoir—also known as Meadow Lake—which supplies a small Montana Power Co. electrical generating plant at Madison Dam. Ennis Reservoir lies about seven miles north of the town of Ennis.

Hebgen Reservoir was created by Hebgen Dam in 1915. The dam rises 87½ feet above the stream bed and measures 721 feet long at the top. Although not currently a large problem, irregular water flows from Hebgen Reservoir for many years seriously hurt trout populations in the upper Madison. Recently, however, a cooperative effort by Montana Power Co. and the Dept. of Fish and Game has provided more desirable flows, generally enhancing the wild trout fishery below Hebgen Reservoir. Since cool waters flow out of the bottom of this deeper reservoir, no water temperature problems currently exist on the upper Madison.

Ennis Reservoir, however, provides an entirely different picture. Madison Dam, a maximum of 47½ feet high and 257 feet long, forms a barrier that causes Ennis Reservoir to catch much of the silt from higher in the watershed. So, the reservoir is less than 10 feet deep in most places, with the shallow south end averaging about 3 feet.

The heavy silt loads which have filled the reservoir originate from many upstream sources. A major sediment contributor is the Quake Lake slide area, which occurred in 1959, partially blocking the Madison River below Hebgen Reservoir. It has probably accelerated the sediment/temperature problem in Ennis Reservoir and may continue to do so.

Other primary sediment producers are the West Fork of the

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Madison, Beaver Creek and Cabin Creek. Fragile, easily erodable soils characterize these drainages. And man's activities such as overgrazing, logging and road building have accelerated the erosion in certain areas, according to Vincent.

The extreme shallowness of Ennis Reservoir causes two major fisheries problems—increased turbidity (muddiness) and higher water temperatures. The turbidity problem stems from windstorms that cause waves which, in turn, stir up the muddy bottom of the reservoir. This creates heavy silt loads—at irregular intervals—for the lower Madison, below the dam. This not only foils fishermen, but also profoundly impacts plant and animal life in the stream.

Temperature problems are a bit more complicated, however. As many swimmers who have dived into deep lakes know, most lakes separate into distinct layers of cold and warm water. Although the surface of a lake generally seems warm in the summer, a level known as the thermocline exists, below which the water remains cold. In a normal situation, this cold water in the bottom of the lake flows through the dam, and a cold-water fishery can be maintained below.

Because of Ennis Reservoir's shallowness, however, it fails to separate into levels of warm and cold water. As a result, at any given time the entire lake is basically the same temperature. In July and August, this can be downright hot—about 70°F. This spells trouble, not only for trout in the lake, but also for fish in the river below the dam.

Cold-water fish like trout don't fare well when water temperatures rise above 70°. Water temperature determines the growth rate and, in part, general health of cold-blooded species such as trout. Therefore, at different temperatures a trout will either gain, lose or simply maintain its weight. Ichthyologists say that trout grow best when water temperatures are in the 50s and 60s. Growth is minimal, or non-existent, below 40° or above 70°. Thus, the trout's normal growing year runs from May-October and suitable water temperatures are a must.

Vincent has compiled statistics since 1972 charting water temperatures both above and below Madison Dam. The department maintains thermographs, which record water temperatures around the clock, at three key locations: one at Varney, about 13 miles above Madison Dam; the second just below the outlet to the dam, and the third near Norris, about 10 miles below the dam. From these thermographs, Vincent has calculated the average minimum and maximum water temperatures for each month from March-October. These calculations provide the backbone of his alarming contentions.

For example, at the station above the dam, the average maximum temperature for July 1974 was 66°, while the average minimum was 55°. In contrast, the station below the dam averaged a maximum temperature of 74° and an average minimum of only 64°. In other words, for the month of July in 1974, this section of the lower Madison averaged nearly 10 degrees warmer than the section immediately above the lake.

Some basic information about water temperature changes in rivers underscores the importance of these findings. While lakes generally have very little day to night temperature fluctuation, rivers normally experience diurnal temperature changes of 10-15 degrees. Good fishermen know this and capitalize upon it. They try to plan their outings so they're on the river when water temperatures stand between 55°-60° and trout are feeding most actively.

Cool nights obviously play an important role in lowering water temperatures in a river. The nighttime cooling effect compensates for daytime temperature increases. Since the temperature of Ennis Reservoir remains essentially the same day and night, warm water pours into the lower Madison during the crucial nighttime cooling period. Vincent noted that several readings showed nighttime temperatures never dropped below 70° at the station below the dam near Norris. On the other hand, the station above the dam rarely recorded nighttime temperatures of even 60°.

Short-term differences in water temperature only tell part of the story, because trout can withstand *brief* temperature rises. Vincent feels the amount of time a river measures above a crucial temperature could be the most important factor.

Summer 1973 best dramatized this long-term temperature differential above and below the dam. At the Varney station above the dam, temperatures read above 70° less than 1% of the time in July and August. (Remember, 70° is the poor or no-growth figure.) On the other hand, the river below the dam near Norris remained above 70° 35% of July and 31% of August. Furthermore, the station below the dam recorded temperatures above 75° 10% of July and August 1973. No 75° temperatures have ever been recorded above the dam since 1970. The highest water temperature ever recorded on the Madison occurred Aug. 7, 1972, when the thermograph at the Norris station, below the dam, read 82°.

How have the warmer temperatures affected the lower Madison trout? First, growth rates for both brown and rainbow trout are much higher above the dam than below. This lends credence to the comments of many anglers who say more large trout can be found in the Madison River above Ennis Reservoir.

Stream surveys back this up. For example, the average four-year-old rainbow trout measured 18.1 inches in the section above the dam, compared to an average of 14.8 inches for the same age fish below the dam. Similar size differences were also found for brown trout. Curiously, small fish seem to do better below the dam than above. Once they reach the 10-inch size, however, this changes drastically.

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Vincent theorizes this size differential could be due to the altered stream ecology of the lower Madison. He cited siltation and the temperature problem as two major factors that have prompted plant and animal changes in the river.

"We know siltation and temperature changes influence plant succession," explained Vincent. "This in turn affects animal life such as aquatic insects and minnows, which trout feed upon. For instance," he added, "small insects such as midges do better with warmer temperatures and muddy bottoms. This could favor small trout. Larger trout, on the other hand, depend mostly on large aquatic insects like stoneflies or minnows such as sculpins. Both forms do best in colder waters with rocky bottoms."

Not only do fish above the dam grow faster, but Vincent's studies also show they are in better condition. He found fish above the dam significantly heavier for their length than the thinner lower Madison trout.

If the warming trend on the lower Madison continues, this portion of the river could become a marginal trout fishery where the trout are small, skinny and uncommon, according to Vincent. "At this time," he says, "we're not experiencing a crash or a disaster, as the total number of trout in the lower Madison remains high" (one of the highest in the state). "But," cautions Vincent, "the signs of trouble persist, such as a slowing growth rate, more skinny trout and fewer large fish."

While the changes are occurring slowly now, Vincent adds the trout population could crash virtually overnight. "The potential for a major fish kill is present every summer," he emphasizes.

Vincent uses past weather records for the Madison Valley to back this up. Using a 90° reading as the measure of a hot day, Vincent investigated the number of hot days on the Madison each summer since 1950. He found an average of 18 hot days occurred each summer. However, Vincent notes that the last year when even an average number of hot days occurred was 1973. "Another year like 1966, when there were 28 days over 90°, will provide the real test," Vincent commented.

What's the solution? Unfortunately few options exist, and all promise to raise serious objections from some sector. The four leading contenders are:

•Permanently lower the level of the lake and allow vegetation to re-establish. If this were done, the river would again meander naturally and allow cold waters to flow into the lower Madison.

•Construct a diking system to channel the river through the lake. This would eliminate the warming effect of the lake and could be accomplished in at least two ways: (1) Channel the main river along the east or west side of the lake, using a dike as one bank and the natural shoreline as the other. High water inflow and outflow tubes could be provided to maintain an adequate lake level for the remaining area. (2) Channel the river through the middle of the lake, much like the Canyon Ferry Project near Helena. (See "From Dust to Ducks" in the May/June 1975 *Montana Outdoors*.) Although this alternative would surely prove expensive, the benefits could also be substantial. First, cool water temperatures would be maintained, insuring survival of lower Madison trout. Second, waterfowl would benefit from improved nesting, brood and resting areas provided by regulated water levels.

Expense looms as the major hang-up with construction of any diking system. Building dams, however, costs no less. The Bureau of Reclamation and Army Corps of Engineers might be employed repairing some of the environmental dilemmas instead of creating new ones.

•Construct a pipeline to carry the cold water that flows into the lake to a point below the dam. This remedy would be expensive and the history of seismic activity in the Madison Valley probably makes this alternative rather untenable.

continued

SPRINGBOARD

This slogan and illustration appear on the back of a small envelope that the Montana Power Co. distributes free to fish and game license dealers. The dealers, in turn, give the envelope to sportsmen when they buy permits. The envelope, which also carries the name and a small advertisement for the license dealer's business, is then used to conveniently carry hunting and fishing permits around during the year.

FOR DISCUSSION

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•Remove the dam. Although this may seem radical, it's most in line with maintaining a natural ecosystem and it would cost little. Removal would have to take place slowly to minimize damage by heavy silt loads.

Regardless of the solution, however, officials must ask whether this river is more valuable to the public as a blue ribbon trout stream or as a power generating site.

This article examines the value of the Madison as a fishery. But what about the Madison Dam as a power generating site? Power production at the Madison Dam is about 9,000 kilowatts—very small by present-day standards. Comparatively, Libby Dam produces 420,000 kilowatts and Hungry Horse 285,000.

Most reservoirs are long, deep and narrow. This results in a larger hydrologic "head," which means more power generation. Ennis Reservoir is neither deep nor narrow. Montana Power Co. officials agree that such a project wouldn't be constructed today. They term it, "one of our small projects we operate because it's there, and it's economical."

What does Montana Power think about the thermal problems on the Madison? Tom Smith of MPC's environmental division says, "Right now we're up in the air. We're hardly in a position to disagree with Vincent's study, as we've done no work of our own." Smith added that no MPC research was likely for the immediate future. He suggested that the problem might be explored by continuing discussion between the Dept. of Fish and Game and MPC.

Smith ruled out the possibility of removing the dam or lowering the water level, however. "A solution to the problem that reduces our generation efficiency can't be considered feasible," he added.

As for a diking system or pipeline, Smith said, "I don't think it's our primary concern to take care of this problem on our own." He added that if funds were provided, and if MPC were assured that no damage to the river would occur, then these solutions might be possible.

One of the oldest dams in Montana (more than 75 years old), Madison Dam marks well the history of an impoundment gone nearly its full cycle. What in 1900 was a sparkling new reservoir now is mud-filled and replete with algae blooms. It provides a grim look at what might lie ahead for many reservoirs.

When Madison Dam was constructed, it's unlikely the fishery received any consideration. Good trout streams flowed throughout Montana and elsewhere. Wouldn't they always? According to old records, Ennis Reservoir provided excellent fishing throughout the 20s and 30s. This occurs commonly on many reservoirs since the initial high influx of nutrients resulting from flooding at first provides an abundant food supply. The abundance usually tapers off, however.

Madison Dam had minimal impact on the river when first constructed. Vincent theorizes that changes in the river didn't become noticeable until the late 40s and early 50s. By this time, fishing had deteriorated in Ennis Reservoir. The deterioration continued through the 60s and 70s and signs of reservoir degradation now abound. Algae blooms occur frequently, often impairing swimming, waterskiing and fishing. Muddy water from wind action on shallow Ennis Reservoir detracts from fishing, swimming and scenic beauty.

It wasn't until the 60s that fishermen began to question what was wrong with the fishing in the lower Madison. "No fish," the fisherman's most common lament, was heard frequently during the hot summer months. The fish were present, all right, but high water temperatures made them inactive. In addition, many summertime anglers prefer fly fishing, which is hampered somewhat by the turbid waters and changes in the natural insect hatches.

Many summertime fishermen are vacationers, out West to dip their rods in a river like the Madison. Some 500 man-days of fishing take place on each mile of the Madison every year. This tremendous influx of tourists into the Madison Valley each summer causes tourism to rank as the second most important source of income in the county. Thus, quality trout fishing is an economic essential to many in the Madison Valley.

Now, in the 70s, most local anglers don't bother with the lower Madison in July and August. It's been taken over by inner tubers and uninitiated fishermen.

How much will the reservoir and the river worsen? What lies ahead for the 80s and 90s? The 21st century?

These questions remain unanswered. A Madison River without bragging-sized trout seems unthinkable, as does a Montana without an abundance of high-quality streams. Yet, the same problems that are surfacing on an old dam like the Madison promise to rear their heads at other dam sites. We have very few free-flowing rivers left.

Yellowtail, Libby, Clark Canyon and other dams have created reservoirs where the fishing may be good now. But some of these reservoirs may fill in with silt—just like Ennis Reservoir. What happens when they become "too thin to plow and too thick to drink"?

With careful planning, it's likely we can avoid major problems like the ones now surfacing on the Madison. But when rivers and resources have already been committed, we can't turn our backs on them just because our options seem limited.

For the lower Madison, future decisions won't be easy. It might take a major fish kill to convince everyone that a problem exists. For now, one thing is clear—all interested parties must work together to somehow arrive at the best possible course to protect this nationally renowned fishery.

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F&G photo by Mike Aderhold

FARM POND FISHING

where fishermen really miss the boat

by Al Elser

Ken had just worked out a beautiful cast, dropping a small gray popping bug with white rubber legs into the middle of a swirl near some weed beds. Almost immediately, a dark shadow appeared under the bug and remained motionless for what seemed a tension-filled eternity. Then suddenly—splat—a white geyser erupted and a head-shaking bass did two somersaults across the weedy surface of an eastern Montana stock pond. When the fish went under the second time, Ken kept it there for a couple of long runs and then beached a fat, three-pound largemouth bass.

Mention bass fishing to the average Montana Izaak Waltoner and you will probably induce disbelief or even disgust. When anglers gather to swap tales about lunkers that somehow "got away," fantastic mayfly hatches or just super fishing, Montana's blue ribbon trout streams usually end up on top. Most fishermen agree that Montana ranks as one of the best—if not *the* best—state for trout fishing. But in a state so well endowed with trout fishing, prairie waters and their potential are too often ignored.

Montana provides almost unlimited fishing opportunities for warm-water fish. In addition to the prairie streams, a myriad of small ranch ponds are well supplied with largemouth bass, yellow perch, northern pike, walleyes, bluegills and bullheads.

Small farm and ranch ponds dot the eastern Montana countryside and provide a backyard bonanza. The Soil Conservation Service estimates that over two million farm and ranch ponds have been built by the nation's landowners. And Montana has her share. The primary use is livestock watering,

continued

but warm-water fishing is definitely a secondary benefit. Most of the ponds range from one to four acres, an ideal size for fishing. Farm ponds offer some of the best fishing and most consistent success available. However, since many ponds lie on private land, anglers must obtain permission before fishing.

Many landowners contact the Dept. of Fish and Game each year about stocking fish and farm pond management. The department reviews each application and the pond is surveyed to determine the most suitable fish species. The department considers features such as area, depth, water temperature and quality, amount of aquatic vegetation and access before making recommendations. Stocked ponds are often resurveyed in subsequent years to evaluate and update management recommendations.

The Miles City National Fish Hatchery, administered by the U.S. Fish and Wildlife Service, is the only warm-water fish hatchery in Montana. The hatchery produces three species—largemouth bass, smallmouth bass and bluegills. Brood fish (mature adults) are placed in ponds and allowed to reproduce. When the young fish are large enough for stocking, the ponds are drained and the fingerlings collected. Bass and bluegills are then distributed to pond owners for planting. Northern pike and walleye eggs come from other federal hatcheries and are hatched at Miles City. These fish are then planted as fry or fingerlings. Other species, such as channel catfish and rainbow trout, are simply distributed by this hatchery. Yellow perch, bullheads and crappie are obtained from established populations and transplanted.

POND HOPPING

Since many ponds lie in close proximity, the concept of "pond hopping" provides the best coverage and greatest chance for a successful angling day. Pond hopping is simple—if fish at the first pond seem finicky, just pack up and move to one where they are more cooperative.

Farm pond fishing has many advantages, for example the variety of fishing experiences. Within a short distance you could possibly choose between

FISHING TIPS

LARGEMOUTH BASS

Probably the most widely sought fresh-water game fish in the continental United States is the largemouth bass. Largemouths offer a challenge because they are smart, unpredictable and learn quickly to avoid ordinary lures and baits. Fortunately, that "old pot gut" is almost always hungry, curious and pugnacious. Young bass feed on insects and tiny crustaceans. Adults go for forage fish, frogs and crayfish.

The largemouth's adaptability to sluggish, warm waters has resulted in widespread introduction into practically every angler's backyard. They were first introduced in Montana in Lake Blaine in the Flathead Valley around 1915. Since, largemouth have been widely stocked, particularly in ranch ponds. The state record, a seven-pound, six-ounce lunker, was caught in 1973 in Ninepipe Reservoir, north of Missoula.

Spawning occurs in Montana during June and July when water temperatures reach 60°F. Bass build and actively defend nests. The bass are very aggressive at this time and strike at almost anything that moves near them. Males guard the nest and fiercely protect the newly hatched fry.

Try your luck with largemouths in the spring and fall, with the best fishing in the morning and late evening. During the summer, lunkers seek haven in the deeper, cooler waters, so fishing is often better at night. Bass generally lurk near some kind of cover—shady spots under weed beds, overhanging trees, logs, brush, stumps, rocks and rocky points.

The cardinal rule in bass fishing is caution. A sloppy or noisy approach will scare wary bass away.

Fishing methods vary with season and water conditions. A surface lure (e.g., popper, swimmer, crippled minnow or darter) works best in calm water. These lures kick up a fuss on top and convince old Mr. Bass that a fish is in distress—easy prey. To fish surface lures, cast and let the bait rest a minute or two. Then, twitch it, let it rest, then jerk and twitch it again. Keep this up all the way in. This technique also works well at night.

Shallow-running underwater plugs work on rough or choppy water. Retrieve these lures steadily, with speed determining depth of the return.

Deep-water lures range from plastic worms to lead-head jigs. Use plastic worms during midday by crawling or bouncing them slowly along the bottom with pauses and short jerks of the rod tip to supply action to the lure. Cast jigs out in deep water. Wait until they hit bottom and then bounce them slowly—by raising and lowering ("jigging")—along weed beds, rocky ledges and in holes.

Bass bugs provide great action with the fly rod when largemouths roam in the shallows. Try them around weed beds, lily pads, stumps, logs and rocks. Work most bugs very slowly with long rests, pauses, short jerks and twitches to imitate a bug, moth or dragonfly.

Many bass are also taken on natural bait such as live frogs, night crawlers, minnows and other creatures. Largemouth bass put up an exciting fight, leaping from the water, standing on their tails and shaking their heads violently to throw the lure. The excellent flesh is easily filleted, resulting in large pieces of skinless, flaky, delectable meat.

WALLEYE

In many northern states, a wonderful, wacky group of anglers praise, cuss, eulogize and lie about the walleye. The true walleye fanatic might claim he fishes to get fresh air and sunshine. If this were true, he probably would have taken up pleasure boating or lying in a hammock. The largest member of the perch family, some anglers rate the walleye a lousy fighter, while others relish the characteristic headshaking pull. "Old marble eye" is often difficult to locate. Then, you must present the bait at the proper level with the right action to get strikes. Walleyes are voracious predators, with both young and adults feeding readily on fish and aquatic insects. They reside mainly in large lakes, preferring the least turbid waters over gravel, bedrock and other firm bottoms.

This species is not native to Montana and no reliable records reveal when introduction took place. But many walleyes have been planted in the last 30 years in impoundments east of the Continental Divide.

They are usually uncommon or absent in vegetated portions of marshes, even if the water is clear. Spawning occurs from April-June when water temperatures reach 40-50°F. Some migration occurs, either upstream or to suitable rocky areas. Eggs are deposited at random among the rocks to incubate. Unlike bass, the parents aren't very concerned about the eggs or fry.

For successful walleye fishing, consider weather, time of day, water temperature and bait. The walleye appreciates cold water,

lunker largemouths, fighting walleyes, gamey bluegills or nice northern pike. Combine any of these in a single day's fishing with yellow perch and bullheads, and the rewards of pond hopping become apparent.

Pond hoppers generally enjoy more liberal fishing regulations and relaxed bag limits. With most species, you are limited only by the number you can catch and carry home. In eastern Montana, northern pike and walleye are the only pond fish with a limit. The use of minnows for bait is permitted in many ponds. In other ponds, fish may be used for bait if they have been frozen or preserved or if heads and entrails have been removed. But be sure to check fishing regulations for specifics.

Farm ponds also offer year-round fishing. Many warm-water fish continue to bite when the water gets cold and the pond freezes, especially northern, perch and walleyes. So you don't have to store your gear when winter comes. You may have to change tactics, but the result remains the same—enjoyable and palatable.

If you seek the company of other fishermen, then pond hopping is not for you. Few eastern Montana ponds receive heavy pressure. In fact, most are severely underfished. The vast majority of the ponds are "way out in the boonies" and seldom see an angler. In other words, these fish producers may not get fished more than a half dozen times a year.

Perhaps best of all is the simplicity of pond fishing. Anglers can test many ponds from shore, without a boat. If a boat is desired or required, an inexpensive 10- or 12-foot aluminum johnboat—ideal for cartop carrying—suffices. Such a boat weighs little, easily holds two anglers and their gear and is fairly stable. Other anglers prefer canoes, but the smaller varieties offer less comfort.

To keep pond hopping uncomplicated, avoid carrying unnecessary gear. Most pond hoppers can get by with paddles or oars, a seat cushion, a jug of ice water, fishing tackle and two anchors. (Two anchors keep even a stiff wind from blowing your boat in exasperating circles.) Since most farm ponds

continued

so the best fishing happens during spring, fall and winter. After spawning, walleyes remain in the same area for several weeks. Their voracious appetites at this time, combined with shallow water, work to the angler's advantage. In fall, walleyes also feed in shallows. In spring and fall, try your luck any time. But during the summer, early morning, evening and night fishing or angling on cloudy or rainy days often meet with success.

Walleyes wander widely as they move about in schools. Locating these schools is sometimes simple and at other times baffling and exasperating. Search first in water near rocky points, rock or gravel bars and deep water bordering rocky shores. As a general rule, shallow inshore waters yield walleyes in the morning, evening and night. Try deeper water in the middle of the day.

Locate walleyes by slow trolling with a spinner and minnow or worm on the hook, bumping the bottom with the sinker to be sure the lure is deep enough. Or, drift with the wind across the lake. Once you locate a school, anchor and start casting. Try lures such as underwater plugs, weighted spinners, spoons and jigs. Sink the lure deep and retrieve it with just enough speed to bring out the action.

Live minnows and large night crawlers also produce good walleye catches. When a walleye grabs the bait, give him plenty of time to swallow before setting the hook. Walleyes generally take a minnow slowly and "chomp" on it, working it down their throats. Don't expect super action from hooked walleyes because they aren't known for speed, flash or endurance. But unpredictability and steady fight make them a desirable catch. Their flesh is firm, sweet and delectable. Nelson Reservoir claims the largest walleye caught in Montana—a 14-pound prize taken in 1974.

NORTHERN PIKE

Few fish enjoy as ambiguous a relationship with man as northern pike. In many areas of their natural range, fishermen consider them a nuisance and a destroyer of more important species. In other areas, anglers rate them an attractive sport fish. Northerns strike all year, any time of day and at a variety of lures and baits. Young northern pike are precocious and feed avidly on almost any organism small enough to swallow. After they reach three or four inches, they feed almost entirely on other fish.

They are native to Montana in the Saskatchewan River system (St. Mary River, east of Glacier National Park). Later, they were introduced throughout the state and plants had greatest success in the northern part of the state. Because of their voracious appetites, northerns were stocked in many ranch ponds to naturally control smaller species and prevent overpopulation and stunting.

Northern prefer marshes; warm, weedy bays in lakes, and reservoirs. They generally inhabit shallow water in spring and fall, moving into deeper, cooler water at the peak of summer temperatures.

Spawning occurs in spring, immediately after the ice melts (March-May). Mature adults move into shallow, vegetated marshes and bays for spawning. Northern pike don't build nests. Instead, the eggs are scattered at random and fertilized eggs stick to the vegetation and other substrates (logs, submerged brush, etc.). The parents return to deeper water soon after spawning, leaving their young unprotected.

Almost any combination of angling technology, from bait casting to fly rods and from still fishing to trolling, catches northerns. A good all-around outfit includes a medium weight spinning rod and reel filled with 10-pound test line. Lures include surface plugs, underwater plugs and spoons in silver, chrome, copper, red-and-white and black-and-white finishes. Trollers often use large spinners with feathers or bucktail or a spinner followed by a minnow on a tandem hook. Natural baits (frogs and minnows) also take their share of northerns. Whether trying artificial lures or natural baits, most anglers use a small length of wire leader to protect the line from the pike's sharp teeth.

Top months for catching northerns are April-June and September-November. In early spring, spawning brings the pike into shallow water. They again prowl shallow water for forage during the fall. But don't forsake northerns during summer or winter because they are still vulnerable. Most pike are taken during the daytime hours. Veteran pike anglers prefer windy, stormy, cloudy days, maintaining northerns hit best under such conditions.

When feeding or hiding, northerns seek weed beds, stumps, sunken trees, logs and other cover. Shallow areas of lakes, such as coves, reefs, points of land or sand and gravel bars, are very often productive.

Northerns often hook themselves by smashing a lure hard. Nonetheless, set the hook hard; their jaws are tough. Northerns usually grab a minnow in the middle. Then they make a short run before stopping to swallow the bait. When the pike starts moving again, set the hook. Small northerns (10-12 pounds) fight on the surface with lots of jumping. Larger pike are slower and do most battling below the surface.

Try ice fishing with a tip-up and a live minnow. Lower the

continued

Now that some of the famed Montana trout waters show signs of overcrowding, it seems proper for fishermen to turn to this very productive, yet underused, fishery—eastern Montana farm ponds.

photo by Frank R. Martin

F&G photo by Steve Boyless

F&G photo by Steve Boyless

F&G photo by Mike Aderhold

are small, a motor is generally unnecessary. A pair of oars or a paddle work just as effectively and more quietly.

Keep tackle to basics, also. For panfish, try an eight-foot fly rod that balances with a size seven line. It will also handle relatively large bass bugs. An ultralight spinning rod and a reel of four-pound test monofilament adds versatility, especially for fishing the deeper parts of a pond. Include a standard spinning rod if the possibility of fishing for a sizable bass or northern exists. An assortment of plugs, plastic worms, natural bait, spinners, ultralight lures and fly rod poppers and sinking flies rounds out the necessary gear.

Montana's warm-water fish fit into two categories: (1) sport fish—largemouth bass, walleye and northern pike which are also considered predatory or carnivorous fish and (2) panfish—sunfish, crappie, perch and bullheads or forage fish. Since most anglers are interested in fishing as a sport, their pursuit centers on the fighting predator—"the bigger the better"—shunning the smaller panfish.

BALANCED POPULATION

A warm-water fish population can be considered healthy or in balance if an annual crop of harvestable fish is produced and the population continues to reproduce. Nature exhibits her extravagance in the high reproductive potential of fish, producing far more young than can grow into a harvestable size. By making maximum use of food resources, prey species produce harvestable adults and small fish which serve as forage. In turn, predators produce young to maintain stocks of adults for fishing and to control potential overpopulation of both prey and predators. The poundage of fish removed in one year by harvesting must be replaced by a similar poundage from natural reproduction. This provides a like harvest in succeeding years.

If this relationship between predator and prey fish is maintained, large fish of both species are available to the angler. Successful combinations include largemouth bass with bluegills, northern pike with yellow perch and largemouth bass with black

minnow through the ice near the bottom, or a foot or two above submerged vegetation. On waters where set lines are legal (most ponds during the winter months), up to six tip-ups can be used, allowing better distribution of fishing pressure.

Another ice fishing idea offering winter enjoyment is dark-house spearing. Build a shelter over a large hole in the ice to keep out light. Lower a lure, which simulates an injured minnow, into the water to attract northerns. When a lunker prowls by, hand-thrust a sharpened spear at the fish, hopefully impaling it. This popular midwestern sport is gaining popularity on many eastern Montana ponds. However, check local regulations before giving it a try.

Montana's record northern was taken from the Tongue River Reservoir in 1972 and tipped the scale at 37 pounds, 8 ounces. While northerns are somewhat boney, the flesh is white, sweet and flaky—well worth the pursuit.

BLUEGILLS

Angling for panfish is often incorrectly associated with young, old or inexperienced fishermen. It can be challenging and rewarding to any angler. As one dedicated bluegill fisherman explained his favorite ways to catch them—"First with a fly rod from an isolated pond and second with a fork from a sizzling frying pan."

Panfish (so called for their resemblance to a pan) are probably the most widely distributed North American fishes. It takes neither skill nor fancy tackle to catch them, nor long and expensive trips to find them. As prolific spawners, they withstand much harder fishing than most game fishes. In fact, most panfish waters are underfished, resulting in overpopulation and small size.

The bluegill is representative of the panfish found in Montana. They provide considerable enjoyment to anglers of all ages because they attack the bait in groups, bite ferociously and fight hard.

Not native to Montana, the bluegill has however been widely distributed in ponds and lakes. Spawning occurs in the spring when males build saucer-shaped nests near the shore. Males vigorously defend these nests—to the extent of excluding females until they are ready to lay eggs. Eggs are deposited in the nest and stick to the substrate upon fertilization. The male guards the fry until they disperse.

Bluegills are active year round—even during the hot months, when other fish are choosy and hard to catch. They aren't particular about bait and will go for anything within their size range. Bluegills are avid feeders, preferring aquatic insects and other invertebrates. Worms are the best all-around bait, with grubs, grasshoppers and small minnows also attractive. Bacon rind, bread or a small chunk cut from a bluegill or other fish work when your bait supply is exhausted. Small spoons and spinners can be productive or try a fly rod with wet or dry flies or popper bugs.

Bluegills travel in schools, so where there's one, there's probably another. When looking for a fishing spot, keep your eyes open for submerged weeds, but don't neglect heaps of brush and sunken stumps. During the heat of the day, bluegills like deeper water in the shade of docks or piers. Try still fishing from shore or boat with or without a bobber.

When a bluegill hits, don't set the hook too fast. Give it plenty of time to take the bait. Watch the float bob, and then set the hook when it goes under.

When fly fishing, drop the fly or bug close to logs, rocks, stumps or other vegetation and let it lie there a minute or two. Then, twitch it gently so it moves a few inches. Let it lie a few seconds more, then twitch it again.

A bluegill hooked on light tackle puts up a scrappy fight. When hooked on a fly, a bluegill with its flat body is hard to control as it travels through the water. Large or small, bluegills and other sunfish make excellent eating. A two-pound, eight-ounce bluegill from Dengel Reservoir near Lewistown, Mont. is Montana's largest on record.

CRAPPIE

Another popular sunfish is the crappie. Biologists recognize two species—black and white. Similar in appearance, the black crappie has seven or eight dorsal spines, while the white usually has five or six. Black crappie prefer northern waters, while the range of the white extends further south. Neither is native to Montana, but both have been introduced into many ponds. The white crappie adapts to water with high turbidity, while the black crappie favors clearer waters.

Try your luck with crappie during the spring when they are spawning. As the water warms up, they retreat to deeper water, venturing into shallows to feed in early morning and evening. Ice fishing also produces nice catches.

Drifting, trolling, still fishing and casting work on crappie. A small, lively minnow is best for bait fishing. Among artificials, use small spoons and wooden wobblers. When they feed on the surface, dry flies, wet flies and streamers are effective. They have

bullheads. Early farm pond research in the southeastern United States revealed the bass/bluegill combination as the best. However, cooler water, shorter growing season and less fertile water in Montana prevented this combination from enjoying the same success. If bass are desired in a pond, they are generally stocked alone.

If the pond is large enough to allow northern pike to attain a length satisfactory to anglers, these large predators can control a population of forage fish. Yellow perch or bluegills can provide forage for northerns and sport for anglers. But fishing pressure must be exerted on the perch or bluegill for the northern pike population to remain healthy.

One of the advantages of eastern Montana ponds—the lack of fishermen—can also spell their downfall. Unmolested panfish populations rapidly multiply and become the dominant species. Panfish reduce game fish populations by extensively feeding on the game fish fry.

Eventually the pond reaches a stage in which practically the only fish present are overabundant, slow growing, undersized panfish. Then anglers quit fishing the pond—which further magnifies the problem.

Let's use the popular bass/bluegill duo as an example. In a healthy situation, bass control the bluegill. Growth of both species is good and fishing is satisfactory. The pond is in balance. If angling or other causes significantly reduce the bass population, however, the bluegill population expands and eventually inhibits bass reproduction. The bluegill population then exceeds its food supply and "stunts," while bass become increasingly scarce. Fishing for both species then deteriorates rapidly.

Another problem occurs when the productive capacity is channeled into an undesirable species like carp or suckers. All too often, a bait fisherman will release his excess bait into the lake, allowing introduction of an unwanted fish species.

The cure for an unbalanced pond is rehabilitation with chemical fish toxicant. Existing fish populations are removed or reduced and replaced by a desirable species or combination of species.

continued

tender mouths, so set your hook delicately.

When still fishing, try different depths since crappie usually feed at a specific depth. Also, when casting spoons and lures, explore different depths. Brush piles, submerged trees and logs and weed beds are good spots.

Crappie are not usually considered good fighters. But when they're hungry, the action is fast and furious. The state record black crappie (3 pounds, 2 ounces) and white crappie (1.72 pounds) both came from the Tongue River Reservoir.

PERCH

Second to the sunfish family in popularity with panfish anglers is the yellow perch. When found, it is usually abundant, hungry and results in a full bag for the fisherman. But the yellow perch is condemned by some and praised by others. Early introductions of perch into trout waters and the subsequent decline of trout brought forth the wrath of trout fishermen. But a healthy appetite and tasty flesh still brings applause from hardened perch fishermen.

While perch are not native to Montana, they have been widely distributed and now inhabit all major drainages. Cool, clear lakes provide the best habitat. Perch adapt well and reproduce successfully under a wide range of conditions.

They spawn in the spring (April-May). Although these "ringed critters" bite all day, year round, including winter, they bite best in spring. During summer, they seek deeper water, so fish in the morning and evening. Look for perch in small coves and bays or along drop-offs and weed beds.

Still fishing with natural baits is the most popular way to catch perch. Attach a light, sensitive bobber to your line, allowing the baited hook to almost reach the bottom. A lively minnow is tops, but small worms, grasshoppers and chunks of fish (a perch eye is great) also result in good action. Keep the bait active to attract the fish. Perch delight in stealing your bait, so don't give them too much time. Wait a few seconds, then set the hook.

Cast spinners and spoons along weed beds and retrieve them slowly. Also, wet flies occasionally work. When using lures, remember the yellow perch is slow, lazy and can't catch a rapidly moving lure. So, work the lure slowly, with short jerks, twitches and alternate pauses to give it a chance to catch up.

Ice fishing for perch is a hot winter pastime. A short rod and light line baited with small minnows or grubs produces great catches. Or, try an ice fly or jig with a spoon or lead-head jig near the bottom.

Even though perch are known as biters and not as fighters, they are well worth your effort because of their excellent flesh. Many ponds produce perch weighing over a pound and offering a scrappy fight. Montana's record perch—two pounds—came from Nelson Reservoir.

BULLHEADS

Bullheads are smaller members of the catfish family. What they lack in size, they make up for in number and popularity. Two species reside in Montana, the black and yellow. They are distinguished by their chin "whiskers" (barbels), with the black bullhead possessing dark or dusky colored whiskers and the yellow bullhead white whiskers. They are not native to Montana, but their popularity as a farm pond fish led to widespread distribution. Today, many ponds harbor bullheads. They grow slowly and breed rapidly, a combination which often results in overpopulation and stunted fish.

It would be difficult to suggest any specific tackle for bullheads since they can be taken on almost any outfit—from a cane pole to spinning rods to fly rods. Although they occasionally follow and strike an artificial lure, bullheads usually go for natural baits. The lowly earthworm takes the most bullheads. Also, strips of liver or other meat, minnows, doughballs, insects and prepared catfish baits are effective.

"Bullies" bite from spring to fall, but the best fishing usually happens during the summer. Although they bite during the day, their nocturnal feeding habits make them most vulnerable at night. Bullheads school, so where there's one, there's likely more.

They feed on the bottom, so cast your rig and allow it to sink. Prop the rod up and wait. When the bullhead first nibbles, give it plenty of time to take the bait before striking.

Use care to avoid getting stuck with the bullhead's sharp fin spines. To remove a bullhead from the hook, grab it so the spines on the pectoral (front) fins emerge between your fingers and the fish can be held firmly. Or, pin the fish to the ground with your foot. Since bullheads often swallow hooks, bring along a hook disgorger or a pair of long-nosed pliers.

The bullhead makes good eating, but skin it first. Nail the head and tail to a board and start peeling the skin with a sharp knife. Finish the job with pliers. "Bullies" weighing up to two pounds have been reported in several eastern Montana ponds, but no state records have been established.

Aquatic vegetation in farm ponds also causes problems. Weeds interfere with fish harvesting, make fishing difficult or impossible and provide shelter to forage fish that might otherwise be available to predators. As vegetation dies, it decays, creating low oxygen levels and increasing the possibilities of winter kill. Chemical and mechanical treatments are, at best, temporary measures. A bank steeply sloping to a depth below the level of light penetration will greatly reduce the amount of rooted aquatic vegetation and increase aesthetic values of the pond.

A list of small reservoirs stocked by the Dept. of Fish and Game is too lengthy to include here. However, department headquarters in Great Falls, Glasgow and Miles City can supply you with this information.

The pleasure of warm-water fishing is all around you. Whether you prefer bluegills on poppers or walleyes on spoons, or whether you choose bass in the summer or northerns in the winter, eastern Montana ponds offer something for everyone. If you are tired of mountains of gear and long trips that don't produce fish, then pond hopping may be your ticket to an uncomplicated and enjoyable brand of fishing.

RECIPES

compiled by Faye Ruffatto

If you've been limiting your family with the same old menus, start casting out for something tasty and new to serve. Why not win the accolades of your family and friends and try a different approach—instead of just frying fish, try a variety of new ways of preparation. Combine imagination and flair and you will have a low-cost, gourmet meal. Dare to attempt an entree such as mushroom-stuffed fish or bun stead sandwiches. For those who hanker after pickled herring, you will savor every luscious bite of Jim's pickled fish.

Mother Nature is in a bountiful mood. She has gone all out in supplying fish "mongers" with walleye, northern pike, bass and many others. So take advantage of her good will.

Fish provide excellent nutrition, high in protein and low in fat and calories for the waistline watchers.

Gourmets have their special recipes and the favorites from the collections of many talented friends, neighbors and relatives follow. Give one a try.

MUSHROOM-STUFFED FISH

2 pounds pan-dressed fish
juice of 1 lemon
salt, pepper to taste
½ c onion, minced
1 c celery
1 c fresh or canned mushrooms
¼ t poultry seasoning

Saute mushrooms, onion and celery. Sprinkle fish inside and out with lemon, salt, pepper and poultry seasoning. Put mushroom mixture in cavity of fish (or place on top of fish) and seal in heavy duty aluminum foil. Place on barbecue for 35-40 minutes, turning frequently.

BUN STEADS

1 c flaked fish
3 hard-cooked eggs, chopped
4 slices American or cheddar cheese, chopped
2 T sweet pickle relish or chopped sweet pickle
1 T onion, chopped
1 T olives, chopped
½ c mayonnaise
12 wiener buns, split

Combine ingredients (except buns); mix well. Spread generously on buns; wrap securely in aluminum foil. Place on baking sheet. Bake in 325°F. oven for 25 minutes.

JIM'S PICKLED FISH

Brine—Make brine by adding pickling salt to cold water until it floats an egg. Make enough brine to cover fish.

Place 10 pounds of fish, cut in 2-inch pieces, in brine overnight.

Boil together for about 3 minutes:

6 c white vinegar
3 T pickling salt
4 T sugar
1 T garlic salt
1 package Crown Colony mixed pickling spice
2 t Accent or other seasoning (optional)

Cool this mixture and save until morning. Then, drain fish; bring kettle of water to boil. You will need a basket that fits in the kettle.

Place a few fish or pieces of fish in basket at one time (enough to cover bottom). Boil fish 1-2 minutes. (Fish will become soft if cooked longer.) Cool under running cold water so fish will not overcook. Slice white onion and break into rings.

To pack fish, place a few onion rings in bottom of plastic or glass jar. Put in a layer of fish. Add more onions and another layer of fish. Continue until all fish are in jar.

Pour mixture over fish and set in refrigerator. Will be ready in 2 days, but will keep in refrigerator 2 months or longer.

TARTAR SAUCE

½ c mayonnaise or salad dressing
1 T olives, chopped
1 T onion, chopped
1 T parsley, chopped
1 T sweet pickle, chopped

Combine all ingredients and mix well. Chill. Makes ¾ c of sauce.

DILLY FISH

2 pounds pan-dressed fish
1½ t salt
¼ t pepper
½ c butter or margarine
2 t dill seed
3 T lemon juice

Sprinkle fish with salt and pepper. Melt butter in frying pan. Add dill seed. Place fish in a single layer. Fry at moderate heat for 2-3 minutes. Turn and fry 2-3 minutes longer or until fish flakes easily with a fork. Place fish on warm serving platter. When all the fish have been fried, turn heat very low and stir in lemon juice. Pour sauce over fish.

dear F&G

"The Guns of Autumn" Producer Has His Say

You are most thoughtful to share with me the Jan./Feb. 1976 issue of *Montana Outdoors*. Perhaps you would like to share with your readers some additions and corrections. For example:

(1) The broadcast took about nine months to make, not a year, and its cost was far, far less than the "several hundred thousand dollars" you claim; in fact, far less than $200,000.

(2) Your reference to Mr. Page and the preconceptions of the National Shooting Sports Foundation (NSSF) is most apt. It was an official of that organization who said to me several weeks before the broadcast that "if it [the broadcast] is objective, we will consider it anti-hunting. It will not reflect our point of view." He further stated that he "probably shouldn't have" said that to me but the fact remains that he did.

(3) You claim that "twenty million hunters were waiting to see [the broadcast]. . ." while 180 million nonhunters were awaiting a cue from CBS "to enter the fray." As of this date (Feb. 27, 1976), CBS has received about 37,000 letters commenting on "The Guns of Autumn." Of those, about 23,000—or about one-tenth of one per cent of the hunters in America—expressed a complaint of one kind or another. About 10,000—or about fifty-five thousandths of one per cent of the nonhunters—expressed their support of the broadcast. (Another 4,000 letters have been received that defy categorization.) This hardly supports your claim of a CBS-inspired campaign, nor is there any evidence or truth to the notion that CBS had anything at all to do with any of the response to the broadcast. To the contrary, the NSSF letter you cite is but one of numerous examples of hunters being urged in print by their spokesmen to write CBS, before and after the broadcast. There is considerable evidence as well of organized write-in campaigns conducted by hunting and gun organizations. Still, the latest mail count reveals a ratio of little more than two-to-one "against the broadcast," not the six-to-one ratio claimed in your article.

(4) You mention one scene, accounting for about 20 seconds of an almost 80-minute film, to support your thesis that CBS used "trick[s]" to push a point to view, yet you fail to specify anything that would support that allegation. Moreover, you wilfully ignore the totality of the broadcast, the fact that a great number of hunters' statements were reported over a great variety of pictures—many of which showed hunters alone or in small groups, on foot and on horseback and in camps, describing in their own words why they hunt. And for the record, nowhere in the broadcast are to be found the words "savage" ". . .This is a good place to get killed" or even an implication that buffalo are trapped or killed in a pen; in fact, it is specifically stated in the script, they are not.

(5) For your information, the Federal Communications Commission looked into the complaints it received with respect to the broadcast, said they were "deficient in material respects" and that none of them "contained any extrinsic evidence of distortion or fabrication," and took no action.

(6) I would agree that the so-called "slob" hunter is "elusive" (as would the Law Enforcement Division of the Dept. of the Interior). To my knowledge, we found few if any in the field and no one in the broadcast was a "slob" hunter according to the hunter's own published standards of conduct.

(7) Having a guide-outfitter-taxidermist investigate the allegations regarding the broadcast is like asking the chairmen of the Republican and Democratic parties to investigate campaign spending, with predictable results. Mr. Atcheson is badly misinformed on every count.

a. The broadcast was not represented to be "a Bicentennial recognition of the heritage of hunting" or as either "pro-" or "anti-hunting."

b. The Deer Hunter's Ball in Utah was filmed in the Richfield Armory, not in a bar, a fact you can confirm by contacting the Richfield Jaycees, sponsors of the event (though I doubt they would agree with you that there was anything "primitive" about it). Additionally, the dance in Richfield was by no means unique. Similar events were taking place in several Utah communities and, as far as I know, none of them occurred in a bar.

c. I don't know what the elderly gentleman at the contest booth in Utah told Mr. Atcheson or what Mr. Atcheson told him. I do know what he told me and he made no mention of an increase in the deer population. Moreover, his account was repeated to us several times by hunters whom we encountered in the mountains. Furthermore, as reported in the broadcast, the "success-ratio" for deer hunters in that area declined from 70% in 1973 to about 33% in 1974, when the filming took place. By the way, none of this was known to us before filming in Utah and had nothing to do with our going there.

d. The killing of the fallow deer at Louie's was not "extended" in any way—not by splicing, or by repeating scenes, or in any other manner. The deer was shot seven times, as shown in the broadcast—just as the first deer kill at Louie's required two shots, as shown in the broadcast. At no time was Mr. Ruggirello's operation characterized by us to him or anyone else as "wonderful" or in any other way. I don't know what insidious meaning you hope to attribute to our complimenting and thanking Mrs. Ruggirello for lunch (which was prepared for the hunters there, not for us). We considered it good manners. As of this date, contrary to your claim, Mr. Ruggirello has not filed suit or taken any other action against CBS.

e. I don't know what Mr. Russo told Mr. Perkins but at no time did we ask him to contact any hunters on our behalf. The broadcast did not show "Perkins blasting a buffalo in what appeared to be a pen" nor was it even implied. As stated specifically in the narration, the buffalo was resting next to (and outside of) the fence of a waterhole.

(8) I assume your source for the alleged statement to Mr. Amory that "we simply couldn't afford the association with [him]" is Mr. Amory himself. It is remarkable that Mr. Amory—whose every word has so long been anathema to the hunter and his representatives—should suddenly become a credible source.

(9) The suit filed by the Michigan United Conservation Club may allege that CBS paid Amory "for suggestions on how to downgrade and denigrate the hunting fraternity" but that doesn't make it so, which in fact it is not. That is an allegation yet to be proved in or out of any court of law.

(10) Your discussion of bullfights and packing houses misses the point. Neither has anything to do with hunting, the subject of the broadcast, nor do the realities of hunting make either bullfights or packing houses any more or less appetizing or humane. One has nothing to do with the other.

Since I do not speak for the anti-hunter, I will not comment on the attitudes and

continued

recycled paper

motivations you ascribe to him (or her). But I take strong exception to the attitudes and motivations ascribed to me and to CBS in connection with "The Guns of Autumn." Just as you are plain wrong in so many of the specifics of your article, so are you just plain wrong in your intemperate assumptions about me and CBS. I can assure you that neither I nor CBS has any "interest" in wildlife, or hunting, for purposes "altruistic" or otherwise. That interest is yours, which may help to explain the character and tone of your remarks.

I'd be delighted to subscribe to your magazine—just as soon as you print the truth about "The Guns of Autumn."—*Irv Drasnin, producer, "The Guns of Autumn," CBS News; New York, N.Y.*

MORE ON "THE GUNS OF AUTUMN"

Thanks for the analysis of "The Guns of Autumn" (*Montana Outdoors*, Jan./Feb. 1976). I am indeed glad to know that wildlife people and hunters in general are united in their detestation of this despicably biased CBS television film.

And in dealing with the CBS producers and all their ilk, and to the bleeding hearts affected and influenced by their slanted reporting, I say "Sportsmen and hunters, 'never give an inch'!"—*Marlin H. Bruner; Clemson, S. C.*

* * * *

I just finished reading Bill Pryor's piece about "The Guns of Autumn" in the Jan./Feb. 1976 issue of *Montana Outdoors*. It is a masterful and perceptive incursion into the objectives of Amory, Drasnin and company. His inference is quite correct: Amory and Drasnin did conspire from the beginning to produce the effect achieved in "Guns." The damage is done and now the question is: Where do we pick up from here?

I thought perhaps you'd like to know that your work is seen and its value appreciated outside Montana as well.—*Cliff Morrow, hunting and conservation director, National Rifle Assn. of America; Washington, D. C.*

* * * *

I have just gotten around to reading the article by Bill Pryor, "Guns of Autumn—the Unorthodox Approach," in the Jan./Feb. 1976 issue. Let me preface my remarks by saying that our organization, as you know, represents a great many landowner and cattle producers in Montana. I don't know the acreage of land controlled by our members but I am sure it is a significant portion of the area used by hunters and fishermen during the year. Most of our people are as deeply concerned about wildlife, the environment and hunting as anyone else, including CBS. They certainly do not subscribe to the implications made in this particular television documentary. I liked the author's treatment of the subject, with the exception of the paragraph alluding to the packing house scene in St. Louis.

I don't think watching an animal die is a particularly enjoyable event, whether it is a baby chick, buck deer or an Angus steer, and the author's rather vivid portrayal of this scene in the packing house struck me as an attempt to do the same thing to the cattle business that CBS did to hunting. This is an area where we had all better recognize the dependence each of us has on the other—the landowners with the burden of game populations and sportsmen with the ability and desire to control these populations. I hear no anti-killing sentiments expressed by any of our ranchers because they are as aware as anyone that game is a crop which must be harvested just the same as livestock or grain.

If hunters are to "fight back" as the author suggests, they would do well to avoid antagonizing the one large group that shares their beliefs in the value of hunting.—*Mons L. Teigen, executive vice president, Montana Stockgrowers Assn., Inc.; Helena, Mont.*

HELP SAVE MELITA ISLAND

The recent sale of Flathead Lake's beautiful Melita Island, used for the last 35 years by the Boy Scouts of America for summer camping, is shocking, dismaying news.

According to an article in the Nov./Dec. 1975 *Montana Outdoors*, the island—nesting place of Canada geese, the osprey and many other kinds of wildlife—will be developed for private homes for those who can afford them. First the camp area at Seeley Lake was lost, now Melita. Where does it stop?

Is this bicentennial year to be celebrated as the one in which one more of our kids' summer camps, with their majestic birds and other wild things, is traded off for the eagle on the dollar?

Will it be the year when a people has lost its love for wild, open spaces where children can have a great adventure in what America once was, all in the name of increasing the gross national product and decreasing the quality of life of its citizens? Is it the year when celebration of the birth of our democracy shows that we no longer care for our birthright?

The founding fathers pledged their lives, fortunes and sacred honor to a free, strong America. What are we willing to pledge? Shall we smugly and loudly celebrate by spending millions on fanfare and souvenirs while America is quietly sold for the profit and pleasure of a few?

I, for one, want none of it. Though no longer a Montana resident, I'm still a Montanan and I'm ready to do battle to save some of that beautiful state. I put in a summer with the boys as nature instructor on Melita and now as a retired biology teacher, I'm ready to put up $1,000 to start the fund to save Melita. I challenge you who love your children and the wild out-of-doors and want to get them together, to do as much, or more or whatever you can. Celebrate the bicentennial with action. Our kids and our land are our only hope for another bicentennial in the future.

The Nature Conservancy, a private, national organization dedicated to helping preserve areas such as Melita, has indicated interest but states plainly that strong local support must be shown before it can do anything.

Please take time to write a few letters to: The Nature Conservancy, 1234 NW 25th Ave., Portland, OR 97210; Western Montana Council, Boy Scouts of America, 127 E. Main, Missoula, MT 59801; Montana Dept. of Health and Environmental Sciences, Helena, MT 59601; *Montana Outdoors*, Dept. of Fish and Game, 125 Roberts, Helena, MT 59601, or to your local newspaper.

Talk it up with your neighbors and enlist the aid of the thousands of boys—now men—who have camped on the island. We can do something before the bulldozers start roaring and the trees start falling.—*Thomas H. Rogers; Spokane, Wash.*

STRIP MINING WON'T BE WISHED AWAY

Strip mining does not seem to be something we can wish away. I've tried. Great concern and anxiety over the process has been voiced and is deserved because there is no practical way to restore land turned upside down to what it used to be. In the arid plains, strip mining destruction of aquifers is an additional complication and frustration. Still, while the fight goes on to make the energy industry more conscientious, we also need to consider methods of spoil land reclamation. Land reclamation is not easy, nor should a single method be best for all sites. Therefore, we need to seek many good alternative ideas.

In several areas, the industry has shown that annual grasses could be raised following heavy applications of fertilizers and some irrigation. This shows hope that spoils may possibly be restored to some use. I imagine, though, the cost of such recovery prohibits its application over wide areas of stripped land. Basically, the cost becomes high because the ground needs continued refertilization.

Let me tie in another area, although it is controversial. Organic farmers are of the opinion that using chemical fertilizers on soil deteriorates topsoil quality with time, whereas application of mulch and dung builds a soil. I suggest that to grow plants

on mine spoils, there must be decent soil, not just the clays and gravels from underneath, fertilized. One possible start to reclamation would be to bring in leaves and stabilized dried sewage sludge from cities and feedlot manure to spread over mine spoils. Perhaps at first the hauling costs for such materials would be greater than for chemicals, but in the long run, building soil in this way would be more economical.

One problem with soil water in many reclaimed sites is acidity or alkalinity. Decomposition products of leaves and other organic matter would, however, tend to bind with excess acid and base ions and neutralize the spoil land.

Of course, leaves and such might blow and wash into pockets within spoil sites. But even to get plants started in pockets and furrows from which to eventually spread would be a step in the right direction.

I offer this in the view that people should bring out and be exposed to all alternatives to solution in this reclamation problem of no easy solution.—*David A. Brock; Austin, Tex.*

REMEMBER WHO PAID

The Jan./Feb. 1976 issue contains a letter from Jim Banks, a senior in wildlife biology at the University of Montana, Missoula. Mr. Banks expressed several opinions on which I would like to comment.

He states that hunters do not have a monopoly on outdoor skills and abilities, that one can enjoy the outdoors without a gun. True, but take a walk during the closed season on a wet, snowy day and I'll give odds any person you meet is a hunter, enjoying nature in *all* its aspects. The anti-hunter seems to confine outdoor activities to warm, sunny days. I have yet to encounter an anti-hunter cutting deer browse or dragging old Christmas trees to provide wildlife shelter in 30° weather.

Mr. Banks takes exception to John Madson's comment concerning Cooper's hawks and fungo bats and states that it "makes no difference." Would you let someone who didn't know a spark plug from a distributor cap tell you how to fix your car's engine? As for many duck hunters being unable to identify waterfowl, I imagine the percentage of those who can't tell a mallard from a pintail would be much higher among anti-hunters, but that is only opinion. I must confess that Mr. Banks' reasoning concerning the "old Korean saying" eluded me entirely.

The rest of his letter evolved into an attack on the justification of hunting, on money spent and magazines leaning toward favorable views on hunting. Who spent thousands of dollars initiating an anti-hunting campaign which required hunters to invest thousands more to retaliate, when the money could have been spent as it was intended—for research, management and education in certain wildlife areas.

Since he is a senior in wildlife biology, I presume Mr. Banks intends to make preservation of the outdoors his life's work. Good for him. But he should remember whose billion dollars paid for the research and theory so neatly defined in the textbooks. Remember whose fight for clean water and suitable habitat created that field in which he majors. Perhaps, next time he will feel a little more understanding toward those of us who choose to spend their time outdoors doing their own thing.

I have read Cleveland Amory's book, and many of his articles over a period of years. I can only conclude that if Mr. Amory enjoys or approves of anything, he is keeping it to himself.—*Craig R. Achenbach; Sinking Spring, Penn.*

AMORY PARROT

I just read the letter from anti-hunter Jim Banks in the Jan./Feb. 1976 *Montana Outdoors.*

He has a right to his opinion, of course, but it seems to be primarily based on parroting Cleveland Amory. His limited knowledge of the pro-gun/hunting faction is very evident in his comment, ". . .massive financial support for articles that support hunting. . . ." Where has he read these articles? Certainly not in the large, nationally circulated publications. I believe there was one in *Reader's Digest,* but after such a long anti-hunting stand, they owed us one. Otherwise, the pro-gun/hunting faction lives only in those publications devoted to that end, but that is their *business,* and support in the form of commercial ads is routine.

On the other hand, Cleveland Amory and the other anti-gun/hunting organizations have acquired funds through legacy and grant which would make even the National Rifle Assn.'s budget look like a low income family's grocery tab in comparison. The sad part is that this massive financial capability is used in anti-gun/hunting propaganda, not to improve the plight of their "friends." To support the NRA, individual members, such as I, have dug into our middle income wallets to support its Legislative Fund which has been evident only in Congress, not on nationally circulated propaganda ads. Reportedly, most of the large national publications and national tv media have refused paid ads by the NRA and other pro-gun/hunting organizations. Where does Mr. Banks get his reference to "massive finanacial support. . ."? Only he knows, but there's probably a little of Amory in there somewhere.

I pay my state taxes to Montana so that when I return, there will hopefully be something of what I enjoy left. I also purchase the sportsman's license yearly to contribute a little more toward wildlife and my future.

Mr. Banks lists himself as a "senior, wildlife biology, University of Montana, Missoula, Mont." As he is due to graduate soon and try to make a mark in his field, I urge the Montana Dept. of Fish and Game to please refer him to New Jersey. The great swamp deer need him, not us. Our friends are enough of a problem—we sure don't need enemies at home.—*Earl J. Propheter; Ellsworth Air Force Base, S. D.*

MISLEADING CARTOGRAPHY

I read with interest your short Catchall article, "Slippery Bill and the Big Bear" in the Nov./Dec. 1975 *Montana Outdoors.* As a former Montanan, I am concerned with accelerating human encroachment into grizzly habitat in the state.

Articles in your magazine are characteristically accurate and factual and this is why I feel I must comment on this particular one. In the map included with the article, the area of the Slippery Bill subdivision is shown with a closely spaced dot pattern. When the scale for this map is calculated, the area covered by the subdivision turns out to be approximately 24 square miles, almost *100 times* larger than the subdivision's actual 160 acres. This type of cartography is, to say the least, very misleading. One may argue that the purpose of the illustration was to locate the subdivision and not to delimit its area. If this were the case, a point symbol, like that used to show Essex or West Glacier, and not an area symbol, should have been used. Maps using an area symbol, such as you have, should include a statement indicating the amount of exaggeration.

This exaggeration of the size of Slippery Bill subdivision was evidently not a mistake, as the same distortion appears on the redone version of the map which appears on page 29 of the Jan./Feb. 1976 magazine.

The article concludes that the subdivision will probably adversely affect the grizzly. If correct, this will mean another loss for Montana's wildlife. The ongoing battle to protect the state's remaining grizzly population is a serious one—one in which misleading information has no place.—*John A. Alwin, lecturer, Department of Geography, Brandon University; Brandon, Manitoba, Canada*

HUNTING APPLIES SELECTIVE PRESSURE

I can't accept Brian Heath's hypothesis (in your Jan./Feb. 1976 issue) that elk populations controlled by hunting will lose their ability to "adapt" to starvation. The destruction of habitat and the decrease in numbers and quality of uncontrolled big game populations is well documented. These animals don't just "adapt" to conditions of scarce food supplies—great numbers just starve to death or die from other causes brought on by malnutrition. The problem is that an animal must expend more energy to find food when it is scarce and scattered, energy that an undernourished animal doesn't have, especially under the harsh conditions of winter.

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In the past, large areas of new game range were constantly being created by uncontrolled fires. Now, man puts out virtually all fires before they burn a small fraction of the area they would if uncontrolled. Of course, elk got along without man in the past, but man is here now, and he should use what is available to him in an intelligent manner. Man lives by exploiting the environment and properly regulated hunting is one way man can exploit the environment without destroying it, as opposed to strip mining, second home subdivision or the use of rivers for open sewers.

The great majority of animals killed by hunting die a much cleaner and quicker death than they would under "natural conditions." For example, it is a fact that wolves sometimes begin to devour an animal they have dragged down before it is dead.

It is ridiculous to state that elk will become less wild or noble because they are hunted by man. The opposite is true. Hunting applies a selective pressure on an elk population—the more intelligent and wary elk have a better chance to survive and transmit these desirable characteristics to their offspring.

Anyone who spends time outdoors and has eyes connected to his brain can see that habitat destruction is the greatest danger wildlife faces today. I resent being castigated by anti-hunters for killing and eating wild game when the vast majority of these same people think nothing of paying someone else to raise and butcher domestic animals so they can enjoy a steak dinner. This is the ultimate hypocrisy.—*Roger Stang; Superior, Mont.*

Stillwater Story Brings Mixed Reaction

In the Jan./Feb. 1976 *Montana Outdoors*, Ron Stoneberg wrote an excellent article concerning adverse effects on wildlife resulting from mining activities in the Stillwater Complex. He presented an accurate account of mining development interests in the Stillwater.

As a lifelong resident of Stillwater County, and speaking on behalf of the Stillwater Protective Assn., I feel, in addition to endangering the wildlife, it is necessary to recognize the severe effects mining will have on the stable social and economic structure of the county. The Johns-Manville mining operation alone has the potential of adding a rapid influx of 2,000-3,000 persons in the immediate area of Absarokee and Columbus. Currently, the population is stable at 5,200. Such population growth will multiply demands for water, sewage treatment, power, housing, schools, police and fire protection, health facilities and roads. These combined demands will raise mill levies and increase taxes for the local people.

The mineral deposits lie in Sweet Grass County, which is where the revenue from the ore will go. Present Montana law has no provision for the transfer of resource revenues from one county to ease the burden on another county impacted by hard rock mining. Unfortunately, social and economic costs will be the burden of Stillwater County taxpayers.

Stillwater County currently has a crime rate five times below the state average and a high school drop out rate of only two per cent (national average is twenty-five per cent). In reviewing the record of mining activities in Rock Springs and Gillette, Wyo. and Colstrip, Mont., it is presumptuous to assume our outstanding record will continue unblemished should mining occur. In Colstrip last year, arrests for larceny increased 800%, dangerous drugs 250% and vandalism 600%. Before mining, the Colstrip community had a comparable socio-economic record to that of Stillwater County's current status.

Many people recall the days when the government subsidized the chrome mining during World War II and the Korean War. Uncle Sam built the roads, schools and health facilities for his workers and provided jobs for many of the local people. However, the impending mining situation holds no similarities. The social, economic and environmental impact will be the sole responsibility of the rural, agricultural Stillwater community. It is the ranchers, farmers and other citizens themselves whose taxes, schools and various services will support the impending boom-bust situation.

The Absarokee High School and the Nye Elementary School are virtually full and could accommodate only a small increase in students without making a substantial capital expenditure. In regard to water and sewer, the Absarokee Sanitation District is currently in violation of Environmental Protection Agency standards. The district needs an additional sewage lagoon estimated at a cost of $40,000 in order to meet *current* standards. The Water Assn. in Absarokee is providing adequate water to existing customers, but a large increase in demand would require considerable capital investment.

In addressing the subject of need for platinum, I feel Mr. Stoneberg made an important point that "platinum producers are now trying to bolster sales by creating a demand for platinum jewelry." Anyone who feels that mining companies play a limited role in the market demand for a product are misinformed. Last summer a Johns-Manville spokesman specifically told the Stillwater Protective Assn. that "mining in the Stillwater is contingent on the economic demands for catalytic converters and platinum jewelry." Catalytic converters currently present more of a problem than a solution. They emit sulfur trioxide into the atmosphere which reacts with moisture in the air to make sulfuric acid, which is extremely dangerous and burns the lungs. In addition, I have noticed a marked increase in advertising for platinum jewelry.

There is a history of destruction of our precious agricultural land and excessive demands for *nonrenewable* natural resource development. Now is the time when we must organize ourselves against large corporate mining and prevent the destruction of our essential life-sustaining needs—air, land and water. How much more of our agricultural land can be taken out of productivity for the "energy needs" of our often wasteful society? Where will

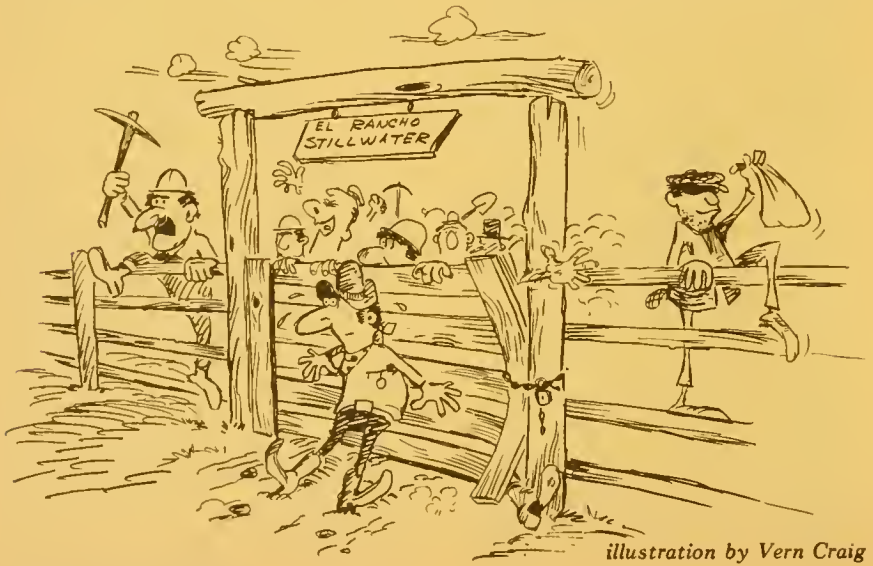

illustration by Vern Craig

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people go next, once areas as beautiful and healthy as the Stillwater are destroyed? I feel these questions need to be addressed now and not after we have ruined the very foundations of our livelihood.—*Mary Donohoe, president, Stillwater Protective Assn.; Absarokee, Mont.*

* * * *

As a miner who also happens to appreciate and enjoy fish and wildlife, I have watched *Montana Outdoors*' treatment of mining-related subjects with increasing dismay. You continue to fail to take advantage of your many opportunities to give your readers a balanced view of the difficult trade-offs we all face in reconciling our conflicting concerns for man and his environment.

To be more specific, the article on the Stillwater in your Jan./Feb. 1976 issue was badly distorted and disregarded facts.

In your item titled "Jewels" on page 25, you name Johns-Manville Corp. specifically and then go on to allege that "platinum producers" are trying to replace a lost converter market with a jewelry market.

In the first place, the statement that the catalytic converter will probably be dropped is unfounded and purely speculative. However much I personally think this should be done, it is still very much an undecided issue. The weight of evidence would point to a probable continuation of the converter requirement for some time to come.

In the second place, the equating of the two different uses of platinum group metals is ludicrous. Using statistics from the 1973 edition of "The Minerals Yearbook" (U.S. Dept. of the Interior, Bureau of Mines, 1975), U.S. consumption of platinum group metals was estimated for 1973, a year prior to any appreciable use in automobile converters, at 1,831,294 troy ounces. Of that, some 61,319 troy ounces, or 3.3% was devoted to jewelry and decorative uses. Comparable domestic uses in 1973 for other categories, to which platinum group metals contribute irreplaceable properties in many cases, are:

	ounces	per cent
chemical, including catalytic converters	573,056	31.3
petroleum	143,944	7.9
glass	90,804	5.0
electrical	666,045	36.4
dental and medical	164,179	9.0
miscellaneous	131,947	7.2

I seriously doubt that Johns-Manville has any association at all with the public relations effort attributed to a spokesman for a major refiner who is quoted in *The Mining Record.* Although the end use of one of its products is of legitimate interest to the mining community, to infer that jewelry uses could replace a strictly hypothetical loss of an end use market of such a magnitude, and then to attack a mining venture on that basis displays a complete lack of responsibility. You should also know that many of the platinum and platinum group metals consumed are devoted to uses which make possible cleaner air and water, such as catalysts in acid conversion and other chemical and petroleum processes. The Feb. 1976 *Reader's Digest* has an excellent article on the many uses of platinum, if you would care to read it.

The *real* argument for a domestic platinum producer, wherever it might be located, is that the U.S. produces only about 1% of its domestic requirement of platinum group metals. Of total world production, 46% is produced by South Africa and 47% by the Soviet Union (again using 1973 statistics from the same source), a consolidation of control which potentially could pale the Organization of Petroleum Exporting Countries oil cartel by comparison, should the producer become so inclined. Platinum group metals have long been recognized by knowledgeable individuals as an area in which the U.S. is gravely vulnerable.

While I have chosen to respond to a single article from a single issue of *Montana Outdoors,* your record of treating mining subjects in this and other issues is uniformly biased and exaggerated. The nation's need for energy resources will not go away, nor will it even be substantially reduced if we all ride bicycles and climb stairs as you allege in your article on the North Fork of the Flathead. This allegation is no less spurious than the one pertaining to the Stillwater being destroyed so that we can wear jewelry. The fallacy is just less clear and requires a more extensive rebuttal. Neither are the environmentally sinless nearly so helpless as you allege in the same article. As a miner, I view possible environmental obstacles to any mineral development anywhere in the U.S. as formidable and potentially prohibitive, regardless of value or merit.

Your publication could perform an immense service in educating the public so that they are better able to understand and cope with the trade-off problems we face. Mining does inevitably have some effect on the area mined, even when carried out by the most enlightened management. I fail to see, however, how your current editorial policy and content contributes anything but misinformation in a field in which the public is misled daily by bias and exaggeration.

Personally, I have reservations as to the propriety of a publication which purports to represent a public agency, engaging in some of the currently fashionable journalistic practices. Surely, a publication which must in some way be financed by public funds, owes more than that to the people. It is ironic that *Montana Outdoors* apparently has no higher ethics than those of CBS which you rightly saw fit to castigate for its "Guns of Autumn." From all indications, you are as dedicated to stamping out mining as CBS is to eliminating hunting, and are willing to resort to the same tactics.

I can only hope your treatment of material relating to fish and game matters is more objective than your treatment of matters relating to my own field. Otherwise, the people of Montana are being very poorly served indeed.—*Gene Pierson; Kellogg, Idaho*

* * * *

I noted in the last issue that you have now taken up the cudgel against any mining of platinum in the upper Stillwater drainage. I also noted your suggestion that platinum jewelry should be boycotted.

Apparently, you are proceeding upon the idea that platinum is used only for jewelry and that women's baubles are not as important as winter range for a small herd of elk. I would urge that you broaden your viewpoint a little bit by reading the article in the Feb. 1976 *Reader's Digest,* beginning at page 37, which briefly explains some of the very practical, beneficial uses of platinum.

I am sure that you won't agree, because, after all, elk sell licenses and raise money and create jobs for the Dept. of Fish and Game, but maybe benefits from catalytic converters on automobile exhaust systems outweigh a little elk range. I am sure that the person with the pacemaker on his heart would rather have platinum than elk.

People are, in my opinion, more important than fish and game. There are hundreds and thousands of acres where people can fish, hunt and camp in this state. Can't we spare a few acres to clean up exhaust emissions and keep peoples' hearts beating?—*Conrad B. Fredricks; Big Timber, Mont.*

IN IT TOGETHER

Thanks to my daughter who works at Glacier National Park, I receive your magazine. I am very much interested in what is going on. I work for the Missouri Conservation Fish and Game Division and I was stationed at Glacier and in Idaho with the Civilian Conservation Corps in 1937-38. So I know the country well, but I can see it is changing fast.

Keep up the good work because we are all in this together.—*Harold E. Bonham; St. James, Mo.*

WON'T MISS ANY MORE

I have been purchasing *Montana Outdoors* from newsstands for the last four years. I must admit that I have missed many issues because someone else beat me to them. Now that I'm subscribing, I hope not to miss any more for awhile.

I am old enough to be your father, but I like the way that you call your shots and the way you see things. Keep up the good work. We need people like you to wake us up to what is being done to the environment in the name of profit and growth.—*C. E. Hostetter; Lewistown, Mont.*

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Hunting Licenses for 1976

compiled by Vern Craig

After all the smoke of debate cleared from Helena's Capitol dome after the 1975 legislature, lawmakers had decided to raise Montana's hunting license fees. Inflation had more than nullified any gains from the last substantial license increase in 1967. Also, an urgent need exists for funds to buy and preserve segments of rapidly dwindling big game winter ranges.

Beginning May 1, 1976, hunters will be faced with a somewhat different set of licenses.

FREE AND REDUCED LICENSES

Resident children under 15 will not be required to have a fishing license and may take a full limit of fish as specified under current regulations. They may also buy deer "A" tags, elk tags and bird licenses at $2 each.

Nonresident children under 15 will not be required to have fishing licenses, but must be accompanied by someone holding a Montana fishing license. Fish taken by accompanied nonresident children will apply to the limit allowed the license holder.

Montana residents 62 years old and older need only a $1 conservation license to fish or hunt upland game birds (except turkeys).

Free fishing permits are available from heads of respective institutions for patients at veterans' administration hospitals and for residents of state institutions other than the state penitentiary. Disabled residents who have a permanent physical or mental condition that prevents them from doing substantial gainful work may obtain free permits to fish from the Dept. of Fish and Game upon certification of disability by a doctor licensed to practice medicine in Montana.

Enrollees of the Job Corps camps located in Montana may purchase resident fishing licenses after they have been stationed in Montana for 30 consecutive days and as long as they remain enrolled in a Montana camp.

RESIDENT LICENSES

Conservation license—$1: A conservation license will still be prerequisite to purchase of any hunting or fishing license except the sportsman's license. Except for residents 62 or older, the conservation license does not carry any hunting or fishing privileges.

Sportsman's license—$35: The resident sportsman's license is a package that includes a conservation license, a deer "A" tag, an elk tag, a black bear tag and authorizes bird hunting (except turkeys) and fishing. The extra money earned from this license goes mostly to improve landowner/recreationist relations, i.e., production of plastic litter bags, a traveling educational exhibit, special management agreements, etc.

Resident game bird—$4: This license allows hunting of sage, sharp-tailed, blue and ruffed grouse, Hungarian and chukar partridge and ring-necked pheasants. Turkey hunters need a $2 turkey tag and a game bird license. Likewise, waterfowl hunters must have a federal migratory bird stamp and the resident game bird license.

Big game licenses:

Type	Cost	
sportsman	$35	
deer "A"[1]	6	(to $7 in 1977 and thereafter)
elk[1]	8	
bow and arrow[2]	6	
black bear	6	
grizzly bear	25	
grizzly bear trophy[3]	25	
antelope	5	
goat	15	
sheep	25	
moose	25	
mountain lion	5	

[1]Residents 12-14 years old may buy bird, deer "A" and elk tags at $2 each.

[2]The bow and arrow stamp is required of hunters during special archery seasons only.

[3]The grizzly bear trophy license is required only of hunters who have taken a grizzly bear.

Fishing: The fishing license fee remains the same as last year, $5.

NONRESIDENT LICENSES

Conservation license—$1: This license is prerequisite to licenses for fishing, bird hunting and to spring black bear licenses.

Nonresident game bird—$30: This license authorizes hunting of sage, sharp-tailed, blue and ruffed grouse, Hungarian and chukar partridge and ring-necked pheasants. Turkey hunters need a $2 turkey tag and a game bird license. Likewise, waterfowl hunters must have a federal migratory bird stamp and a Montana license that authorizes hunting of game birds.

Big game, fishing and bird hunting license—$225: This package includes a conservation license, deer "A" tag, an elk tag, authorizes hunting of upland game birds and fishing. It also serves as a prerequisite (1) to the purchase of grizzly bear or mountain

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lion licenses and (2) to application for antelope, moose, bighorn sheep, mountain goat, special deer and special elk permit drawings.

There are no separate elk licenses for nonresidents. So, out-of-state residents need a $225 license to hunt elk. No more than 17,000 of the $225 licenses may be issued during a license year. They will go out on a first-come, first-served basis.

Combination bird and fishing license—$50: Nonresidents who do not hold the $225 package need a bird/fish license as prerequisite to purchasing nearly any other hunting license, including deer, grizzly, black bear season and mountain lion licenses. Combination license holders will also be eligible to apply for antelope, moose, bighorn sheep and mountain goat drawings and for special deer permits. *The combination license fee will not be refunded* even though the holder is unsuccessful in deer or special license drawings.

Summary of nonresident hunting and fishing license fees:

Type	Cost
conservation (prerequisite to fishing, bird and to spring black bear licenses)	$ 1
fishing (season)	20
fishing (temporary, valid day issued and 5 days thereafter)	10
fishing (daily)	2
bird	30
combination bird/fish (serves as prerequisite to big game licenses where required)	50
special deer "A" (prerequisite required, each valid in several specified hunting districts. Persons who hold the $225 combination license may not apply for the special deer "A" licenses.)	50
grizzly (prerequisite required)	125
grizzly trophy (Any person who has killed a grizzly bear shall not be eligible to apply for another such license for the next succeeding seven years.)	25
black bear (spring only, prerequisite required)	35
black bear (prerequisite required)	50
antelope (prerequisite required)	50
sheep (prerequisite required)	125
goat (prerequisite required)	75
moose (prerequisite required)	125
mountain lion (prerequisite required)	25
big game, bird and fish	225

editorial

the rape of montana

Although I became a resident of Saskatchewan, Canada, nearly three years ago, I continue to keep my eye on Montana, for she is the land of my youth, my parents' home, and, I suspect, claimant to a big piece of my heart.

It's the place where, as a teenager, I used to drive my folks' 1957 Chevy to a small abandoned earth reservoir somewhere between Bridger and the Wyoming line. Once there, I'd hop out of the car, walk up an unused overgrown road (ever watchful for rattlers) and plop myself down on a bank overlooking the small, stagnant body of water. Listening to frogs croaking. Shooting rusty old beer cans with my dad's .22. Swatting mosquitoes. Watching the horizon of two low, sagebrush-covered hills for silhouettes of deer. Silence.

This is the unpolluted air which heard my teenage rebellion, soothed my angers, watched me grown into young womanhood. Sometimes I remember this place. I think I'd like to go back again, to take my kids there. Let them yell, laugh, run, skip rocks, smell the rank water. Listen to the frogs, generations descended from the ones I heard so long ago.

But I'm afraid—I don't think I *can* go back. And if I do—what will be there? The Corps of Engineers? Survey sticks with their gaudy, plastic red flags? A sleek ribbon of new highway? An open pit coal mine? A plush motel?

For several years now I've become increasingly aware of just what "development" means, and what it is doing to our lands—my Montana in particular. And more and more alarmed as the pace quickens.

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Four years ago I was convinced that Montana was in the enviable position of still being able to determine her own destiny. Oh, yes, there was talk then of strip mining in the Bull Mountains, an international jet port at Glasgow and resort motel complexes dotting the entire landscape. Despite these opportunity/threats, Montana still had the devil-may-care attitude of a careless, naive virgin.

I had a dream. Montana, she was in a big, round room. On all sides were open doors, doors of opportunity. She had the choice to walk through any, all or none—at her whim. Then Montana, she began flirting, flaunting her vast attractive body of natural resources for all to see. In a drunken stupor, she went a'courtin'—multi-national corporations; economic, tourism and agribusiness developers, even Washington, D. C. She was often rudely turned down—jilted—because of her inherent youth, rough edges, inaccessibility and general lack of sophistication.

So, she tried harder. She wanted the *good* life. So much so that she even hired high-priced consultants to advertise her beauty far and wide, to any who would listen.

Then came a serious suitor, who called himself by the name "Energy Crisis." A big, gray smoky smelling monster with yellow uranium dust on his slimy, pointed fangs. He looked like a steam shovel's mouth, with no eyes. Though it's not that he couldn't see, mind you—he didn't *want* to see.

For what he would see, if he could, wasn't pretty. Gouged out hillsides, plugged up canyons, dried up pine trees scattered flat on their sides as if somebody had spilled a box of huge toothpicks. Free-flowing streams of aqua-blue water now stopped, dead in their beds. Millions of fish still trying to convince themselves that this was their home, despite tons of concrete blocking the paths to their old haunts.

No, this suitor doesn't have any eyes. So he can't appreciate Montana's exquisite beauty. Her blue skies. Her lonely hills. *Nor does he much care.*

But he has ears. He can hear her squeals of delight as he tickles the doors of her financial institutions.

Listen—I'll tell you the rest of the dream. There were some who said Montana had been raped. Or was being, or would be. The case even went before a court of law. There sat you and me in the courtroom. As the judge entered, we all stood up and then sat down again. His opening pronouncement went something like this: "I have reviewed the evidence, and have come to the unfortunate conclusion that it will be difficult, at best, for this case, as presented, to stand up in this court of law."

I woke up then and tossed and turned for the rest of the night. I kept trying to figure out what had happened and how the trial might have turned out.

Let's just surmise that the verdict was "guilty." Then who were the defendants? The monster Energy Crisis? The jet set? The air-conditioned, thirsty, car-crazy easterners or Californians?

No, gentle jurors. They may have all helped, but the true defendants—the guilty—are *you* and *me*. We have not only courted disaster by silence; we have also accepted the pieces of silver for betrayal and we have been active accomplices to the crime.

For we *also* demand color television sets, gas-guzzling automobiles, new furniture and buildings in place of old, TV dinners, disposable hamburger wrappers, furnaces in winter and air conditioners in summer, individually wrapped cheese slices and the unalienable right to drive our snowmobiles and trail bikes wherever we damn well please.

We *also* throw out what's left of our natural resources, in the form of garbage—enough to fill the Berkeley pit to the brim every year. We must therefore point the finger of accusation back upon ourselves and quit crying "rape!"

In the Sept./Oct. 1975 issue of *Montana Outdoors*, Steve Bayless, in the article, "Montana Deer: A History of Change," admonished both himself and readers that, "Maybe we should take a long, hard look at where we're headed, and whether or not that's where we want to go."

I have a great warm spot in my heart for Montana. And I now see her standing in that same great round room as in my dream. There are still many doors, but most of them have closed. Some, she has entered and passed through, unable to return. Others, she may slam shut and refuse to enter at all.

But one thing is clear: Her choices are becoming limited. Now that she is older, wiser and more experienced, will she continue to let herself be used, or will she control her own destiny? Will she ever learn to say "No!"

And will we, Montana's children, perhaps learn to appreciate our Mother's beauty and resources? Or will we, like the rest of the developed world, continue and even accelerate in our mindless consumption and abuse of the gifts we have received as a birthright?

And what will we give our children? A place by an isolated pond to sit and think and listen to frogs and watch for deer? Or perhaps the Corps of Engineers, all gift-wrapped in a sleek coat of fresh concrete, waving their survey sticks with the gaudy, red plastic flags, while they sit and sip their very, very dry martinis in the beverage room of a plush motel, smack dab at the bottom of an open pit coal mine in the Bull Mountains?—*guest editorial by LeeAnn Knutson*

recycled paper

FISHING ACCESS

by Ron Holliday

"The gods do not subtract from the allotted span of men's lives the hours spent in fishing."—from an Assyrian tablet, dated 2000 B.C.

"A large quantity of Montana's most productive waters lie wholly or in part within private lands, and sportsmen depend upon the good will of the landowner to fish these waters. It matters not at all the quality of fishing the Commission is able to provide if the public is denied access to these waters.

"Every year sees an increasing amount of water denied to the public for fishing. While the lack of fishing is related to fishing pressure, nevertheless, it has not developed from the direct pressure upon the fisheries resource itself, but rather, from pressure of thoughtless and inconsiderate individuals upon the landowners."

Sound familiar? Although you could have read this in a current Dept. of Fish and Game publication or other source, this quote comes from a 23-year-old department biennial report.

Difficulty in finding a place to fish probably first became acute in the years following World War II. Before then, low population density and poor transportation undoubtedly were factors in keeping fishing pressure low. Economic problems, especially in the 1930s, kept many people close to home.

A lot of things boomed after the "Great War"—the economy, babies, roads, autos, city populations and fishing pressure. Montana citizens

continued

and guests began to have more leisure time, more money to spend on leisure pursuits and quicker, easier transportation. These and other factors combined to make finding a place to fish, as indicated in the 1953 report quoted above, a definite problem by the early 1950s.

Recognizing and responding to this ever growing problem, the department began a limited fishing access acquisition program. Passage of the Federal Aid in Fish Restoration Act in 1950 levied an excise tax on angling equipment and initiated a program to distribute this money to the states for fisheries management projects. Commonly called the "Dingell-Johnson" (sponsors of the act) or "D-J" program, money from this source was combined with state license revenue on a cost-share basis to purchase some of the early state-owned fishing access sites. Although land is no longer purchased under this program, "D-J" remains a vital funding source for Montana fisheries management programs.

As pressures continued to mount on private land for fishing and other outdoor recreation pursuits in the early and mid-1960s, two significant events took place which helped the situation. Congress passed the Land and Water Conservation Fund Act which provides money to states for acquisition and development of outdoor recreation areas and facilities. About the same time (1965), the Montana Legislature transferred the state parks function to the Dept. of Fish and Game.

So by the mid-1960s, the stage was set. More and more people wanted a place to fish. More and more landowners closed their property to fishing in response to this added pressure. Congress had provided a substantial source of federal funds which, matched with state license fees, could be used to buy fishing access sites. The Montana Legislature had given the department more outdoor recreation responsibility and recreation area/land management expertise by the transfer of the state parks function.

Responding to these problems and opportunities, the department, the Fish and Game Commission and the legislature accelerated access acquisition programs. The 1969 legislature appropriated $367,000 (½ state, ½ federal money) for acquisition and development of sites. The 1971 assembly followed with an appropriation of $376,000, again one-half state funds, for the same purpose.

Landowners, sportsmen's organizations, individual anglers and other recreationists and legislators strongly supported the program. As a result, the 1973 legislature appropriated $1 million for acquisition and development of sites. A year later, Montana anglers successfully supported legislation which earmarks a portion of each fishing license sold specifically for access acquisition and provided a supplemental $1 million appropriation which enabled the department to implement the law. Again, only one-half of access acquisition/development appropriations are license fees. The other half comes from the Land and Water Conservation Fund. In effect, the Montana fishing license buyer receives a "2 to 1" benefit from the program. The last session of the legislature provided a $1.8 million appropriation for access acquisition and development—almost five times the amount appropriated only seven years ago.

SITE SELECTION DIFFICULT

Actually purchasing an area can be a very difficult procedure. Priorities must be set, considering area population, fishing pressure, total area access available to the public, water quality which dictates the type and quality of fishing available, previous area acquisitions and other factors. Then, specific sites must be selected.

The site must be for sale by a willing seller and priced at the "going rate" (appraised value). It must have legal access and be large enough to accommodate adequate numbers of people. If possible, improvements—such as barns or houses—should be minimal. Of course, it must provide access to fishing.

After weighing these factors, the department makes recommendations to the Fish and Game Commission which, in turn, makes final decisions on which areas to purchase.

ACQUISITION NOT THE ONLY METHOD

Outright purchase usually offers the best method of obtaining permanent quality access sites, but it is by no means the only way to do so. Gifts of land, rights-of-way and easements, occasionally trading surplus department land for areas which provide more recreation and managing lands surplus to other governmental units' needs (such as surplus highway rights-of-way) are methods used to acquire access to streams, lakes and reservoirs. Newly passed legislation allowing for conservation easements, given by corporations and individuals, also offers promise of giving access to waters at no direct cost.

"Even though the Commission is expected to do so, it cannot begin to approach the problem of public access alone. It will continue to work on the problems of public access, and it will continue educational programs."

This statement is as true today as in 1953 when it was written in the department biennial report cited earlier. Even though the acquisition program has accelerated, most Montana fishing opportunity

remains on private land. Department personnel continue to work toward improving landowner/sportsmen relations—for example, attempting to keep waters open to the public by easing landowner problems. This is a big chore, and thoughtless people who disregard landowners' rights make the job tougher each year. Nevertheless, information and education programs and good law enforcement efforts make many more people aware of landowner problems and keep waters open to public use.

Another attempt at keeping waters open involves entering special management/enforcement agreements with private landowners and other governmental units throughout the state. Such a concerted effort is now being made on a major western Montana waterway which will hopefully keep miles of prime trout water open to anglers, floaters and other outdoor recreationists.

FUTURE FISHING OPPORTUNITY

The demand for fishing will undoubtedly remain very high. Time after time, recreation demand surveys of Montana citizens and visitors show fishing as one of the state's top recreation pursuits. Population growth and a continuing shift from a rural to urban population pattern will place increasing pressure on the resource. This, despite all efforts, will probably close more land, making the gap between supply and demand even greater.

Much of the future of the access acquisition program revolves around a familiar "object"—money. Earmarking a portion of fishing license fees for access acquisition will make it possible to purchase more areas, but it ignores management costs which are necessary to truly make an area available to the public once it is acquired.

Only basic facilities are now developed on access sites, but even these items (fencing, access roads, directional signs, sanitary facilities, etc.) cost money to build and maintain—more and more each year. Rising maintenance costs put a strain on other important department programs, so it is imperative to make every effort to keep these expenditures low.

Subdivision has affected the access picture in at least two major ways. The "subdivision lot price" has driven land values on high quality streams and lakes to astronomical levels, by Montana standards anyway. So, the acquisition dollar buys less and less frontage each year. Another major problem of subdividing prime waterways and lake shorelines is that it makes working out landowner agreements to open frontage to public use almost impossible.

SUMMARY

The fishing access program has accelerated greatly during the past few years due to concern and support from landowners, sportsmen, the department, commission and the Montana Legislature. Rising land costs and an increasing amount of private land closed to public use offset some of the gains. The future of ample fishing opportunity in our state lies not only on the acquisition of more sites but also in cooperation between sportsmen, the department, the commission, private landowners and the legislature.

Fishing is indeed "good for the soul" and we are blessed with some of the best. . .if we can get to it.

THE NONGAME FUNDING DILEMMA

It's up to you. . .

by Hank Fischer

IT HAS often been pointed out that no animal has become endangered through regulated hunting. Hunters have been paying for their recreation for decades, and in the process have protected game species through research, management and law enforcement programs. As a result, designation as "game" has unquestionably meant survival, increased numbers and improved habitat for many animals.

But what about the "poor cousins" of the wildlife family, the nongame species? For many, so little is known about their habitat needs that it is almost impossible to chart a proper course of management. For a few, "endangered" status may be only a pound of poison or a bulldozer blade away. The problem? Although everyone enjoys nongame wildlife, this concern hasn't generated the dollars needed to insure the integrity of the habitat these critters depend on.

Criticism has been aimed at state fish and game departments and the U.S. Fish and Wildlife Service (FWS) for ignoring nongame wildlife. Critics claim that an ecosystem approach—one that recognizes each animal as an integral part of the complex system of soil, vegetation and water that makes up its habitat—has been superseded by more utilitarian game programs. Although game programs benefit nongame wildlife in countless and unmeasurable ways, many in-the-know professionals acknowledge that wildlife programs often lack diversity. Consider the comments of John S. Gottschalk, former FWS director and currently executive vice president of the International Assn. of Game, Fish and Conservation Commissioners: "Many of us in the wildlife conservation profession have thought for several years that our programs have been too game-oriented for too long. That is to say, if a particular species can be exploited, we find ourselves studying it and attempting to manage it in order to expand its contributions to man's welfare."

Gottschalk continued, "We are overlooking many of the most important elements in the natural systems which support living things in general. In other words, the concerns about endangered species are as narrowly focused as those supporting game wildlife programs."

This problem seems inherent to a system funded solely by sportsmen. Gottschalk and others have pointed out that the current emphasis on game species will probably continue unless nongame wildlife fans pick up the ball—and the bill.

At the request of the FWS and the Council on Environmental Quality, the Wildlife Management Institute (WMI) investigated such problems as how much money would be needed to fund adequate nongame programs in the 50 states and 3 territories, and how the money might be raised. In a report published in 1975, the WMI noted that a tax on outdoor recreation equipment seemed like the most promising and desirable means of raising nongame money. This follows in the tradition of taxes on fishing and hunting equipment which anglers, gunners and bowhunters pay. This type of "straight line" taxation—where those who receive the benefits foot the bill—has proved popular in the past.

Money raised by an excise tax would then go into a federal fund, which the FWS would administer to the states on a cost-sharing basis. In the past, this has meant the federal government pays 75% of a project, while the state finances 25%. For game species, the 25% is paid with license fees from hunters and fishermen. For nongame species, a special state fund would have to be established. (This brings up another fund raising problem which will be discussed later.)

The WMI study estimated that an excise tax on outdoor recreation equipment might raise $150 million for nongame programs by taxing such items as:

- camping equipment (backpacks, hiking boots, sleeping bags, tents, etc.),
- snow skiing equipment (downhill and cross-country),
- skin diving equipment,
- recreational vehicles (including campers, trailers, snowmobiles, trail bikes, canoes and rafts),
- birding equipment (feeders, food, bird houses, binoculars, etc.) and
- photographic merchandise (including still and movie cameras, film, etc.).

continued

F&G photos by Bill Schneider

Nobody is calling this potential source of funds "birdseed." In fact, the WMI found that even a mere 1% excise tax on birdseed could raise nearly $200,000—enough to fund Montana's entire projected nongame needs. (See chart for a breakdown on individual items.)

Another key part of the WMI study determined how much money would be required to initiate adequate nongame programs in the entire U.S. In what the WMI called a conservative estimate, $40 million would be necessary. Therefore, an excise tax on outdoor recreation equipment could easily fund a nongame program on the federal level. However, the FWS would need additional money from Congress to administer the program.

Dennis Flath, the department's nongame wildlife biologist, estimates that about $200,000 would be needed to run a "very basic" nongame program in Montana. The present funding stands at $27,000, less than 1% of the department's total budget. This money comes from hunting and fishing license fees. Although sportsmen certainly rank high on the list of nongame wildlife appreciators, it seems unreasonable to expect them to pay the whole bill.

Other than sportsmen, the only source of income for Montana's nongame program is the recently issued $5 nongame certificate. Although a step in the right direction, it is unlikely that voluntary sales will ever entirely finance a nongame program. Ohio—much more populated than Montana—raised only $11,000 with a similar program. California raised $20,000 in a year. Colorado managed only $4,800 in 1975, with cost of administering the program an estimated $2,400. A Colorado official termed the stamp program "a howling failure." Stamp and certificate programs must be recognized as public relations gestures to make people aware of nongame programs and to allow concerned citizens to contribute.

Estimated Revenue from Potential Manufacturers' Excise Taxes on Outdoor Recreation Equipment

Item	Tax rate	Estimated yield (millions)
camping equipment	10%	$15.72
snow skiing equipment	10%	2.20
skin diving equipment	10%	2.82
recreational vehicles	1%	10.319
photographic merchandise	5%	117.855
binoculars	10%	.500
wild bird foods	1%	.199
	Total	$149.613

Estimated revenue from excise taxes: $149,613,000

Estimated money needed for expanding nongame programs in the U.S. and territories: $40,000,000

Assembled from "Current Investments, Projected Needs, and Potential New Sources of Income for Nongame Fish and Wildlife Programs in the United States," by the Wildlife Management Institute, 1975.

These figures are based on 1972 manufacturers' estimates of total sales. However, even if only a 1% tax were levied in all categories—using the 1972 estimates—over $36 million would be generated.

Many potentially fruitful ways of funding state programs do exist. Missouri came up with the novel approach of a 1¢ tax on soft drink bottles. Although initially popular, the soft drink industry in the state submarined this attempt before it could get off the ground. Missouri now plans to introduce a bill into the legislature that would increase the general sales tax by 1/8 of 1%. Although this increase would support conservation activities, a large portion would go to nongame wildlife. Missouri Dept. of Conservation officials estimate this tax increase would bring them $18 million annually—nearly doubling their current budget.

Washington had some success with a tax on the sale of personalized license plates. Although this measure raised only $42,000 in its first year (1974), department officials say response this year has been very good, perhaps as high as $80,000.

California currently has the best funded nongame program in the country—more than $1 million dollars. Although it has a voluntary stamp program like Montana's, the bulk of California's nongame funding comes from the state's general fund. State funding for nongame wildlife started in 1974 in response to pressure by various conservation groups, citizens and the Fish and Game Commission. The rationale for this move is clear: Since the wildlife of the state belongs to *all* people, then it is only just that *all* people should pay—not just hunters and fishermen.

Several states have followed California's lead and recognized their responsibility for financing nongame wildlife programs. Colorado legislators this past year allocated $67,000 from the general fund for nongame wildlife.

No money from the Montana general fund has gone to nongame wildlife. Yet the Montana Nongame and Endangered Species Conservation Act of 1973 states clearly, "It is the policy of the state to manage certain nongame wildlife." This same act charges the Dept. of Fish and Game with conducting investigations, developing information and issuing management regulations for nongame species. Clearly, the department has not been able to do this—and will not be able to—until the citizens of the state are willing to bear the cost of a nongame program. Money from the general fund would not have to finance the entire program, but

would provide only the base line amount needed to conform with the law.

Money from the general fund might not even be necessary once Montana develops a viable program for raising funds. Several possibilities exist, and readers are encouraged to suggest others. Most states have tried to tailor their funding programs to the special aspects of their state. University of Montana Professor and Fish and Game Commissioner Dr. W. Leslie Pengelly calls the funding problem "a kind of mental jujitsu—people give where the pressure is greatest."

In Montana, many people feel the pressure is greatest on the vast amounts of resources exported to other states and countries. In developing these resources, all wildlife often suffers greatly. It would seem equitable, then, to have those who contribute most heavily to the destruction of wildlife habitat to also contribute heavily to its maintenance. Only a miniscule tax would be necessary to raise the $200,000 needed for a nongame program. Some of the sources might include:

- royalty fee on strip mining,
- surcharge on timber sales on public lands,
- surcharge on grazing leases on public land,
- surcharge on electricity produced within the state and shipped out and
- capital gains tax on land sales for subdivisions.

Another possibility for nongame funding is a $1 check-off fee on the state income tax. Similar to the check-off fee for campaign contributions, this form of donation might be popular in a state like Montana where wildlife is highly valued. The public has always been sensitive to wildlife needs, but has not always had the machinery to convert this concern into action.

The future welfare of all Montana wildlife will be determined by the availability and suitability of habitat. For many nongame species, we are not even sure where or if they exist in the state, to say nothing of their habitat needs. A healthy nongame program would help answer these questions and preclude the need for costly "rescue" operations such as those undertaken for many endangered species. A good nongame program would allow the department to work with all members of the ecosystem—and better meet the needs of nonconsumptive human users of wildlife.

Picnickers, bird watchers, snowmobilers, campers, hikers, photographers and those who just like to know all kinds of wild animals still abound—*it's up to you.*

contributors

Although "The Art of Social Conservation" was written nearly 14 years ago, Dr. W. Leslie Pengelly's words ring as true today as they did then—perhaps even more so. His article on page 2 was adapted from a paper presented before The Wildlife Society in 1962. Pengelly was recently named vice president of the group. (See the article in this issue's Catchall section.) A member of the Montana Fish and Game Commission, Pengelly is chairman of the University of Montana Dept. of Wildlife Biology and professor of forestry. As a highly respected member of the wildlife profession, he has received the Arthur S. Einarsen Award (Northwest Section of The Wildlife Society) and the American Motors Conservation Award. He earned a B.A. in biology from Northern Michigan University, Marquette. Both of his graduate degrees were awarded in wildlife management, the M.S. from the University of Michigan, Ann Arbor, and the Ph.D from Utah State University, Logan.

If you said that Montana ranks as one of the top states in the country for trout fishing, nobody would give you an argument. But **Al Elser** enlightens anglers about an almost unlimited opportunity for catching warm-water fish—farm pond fishing. In a *Montana Outdoors* Recreation Guide, Elser tells anglers how to go about learning the thrills of "pond hopping," describes the species which inhabit farm ponds and provides valuable angling tips. Elser is the regional fisheries manager in Miles City. He has done extensive research on paddlefish and is involved in coal-related studies with Decker Coal Co. on the Tongue River Reservoir. He earned a B.S. in fisheries science from Colorado State University, Fort Collins, and his M.S. in fish and wildlife management from Montana State University, Bozeman. For your ticket to an uncomplicated and enjoyable brand of fishing, turn to page 15. In the recipe category, **Faye Ruffatto**, secretary in the Miles City regional department office, provides some new angles on old favorites.

Montana Outdoors is pleased to publish a guest editorial by **LeeAnn Knutson**, "The Rape of Montana." Although Knutson has lived in Regina, Saskatchewan, Canada for three years, she grew up near Bridger, Mont. and the memories of those years—the frogs croaking, the unpolluted air, silence on a weekend afternoon—are things she would like to return to and share with her family. But if she did, what would she find? Do any isolated ponds offer solitude where one can think and listen to frogs and watch for deer? Or has "progress" made her return impossible? Knutson attended Eastern Montana College in Billings and Walla Walla College in Washington. She works as a free-lance technical writer, specializing in education. Her editorial appears on page 29.

Hank Fischer, *Montana Outdoors* intern, has contributed two articles to the May/June issue. "The Lower Madison: From Blue Ribbons to Inner Tubes?" warns that one of the most scenic, accessible and productive trout streams in the nation might go up in steam. Terming the future of the lower Madison "precarious," Fischer points out that the river is slowly but surely becoming too warm to support trout. The article begins on page 10. His second article explores "The Nongame Funding Dilemma." He details what some other states have done to fund nongame programs and offers some suggestions for Montana. Turn to page 34. Fischer returned to his graduate work in environmental studies at the University of Montana in January. His undergraduate program at Ohio University, Athens, emphasized English.

The department's fishing access program has accelerated greatly during the past few years—largely because of cooperation and support from landowners, sportsmen, the department, the Fish and Game Commission and the Montana Legislature. But rising land costs and an increasing amount of private land closed to the public have offset some of these gains. The administrator of the department's Recreation and Parks Division, **Ron Holliday**, examines the access problem and traces the history of the program. Turn to his article on page 31. Holliday earned a B.S. in recreation from Rice University, Houston, and an M.S. in park administration from Colorado State University.

FARM POND FISHING
—see page 15